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The Isolation of *Pasteurella septica* from the Udder Secretion of a Cow

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A 16-year-old Friesian-Shorthorn cow with a seven-day-old calf developed mastitis. The first sign observed was that the milk was thick and contained curds, whilst the appetite was poor in the morning and lost by the evening. The following day the udder was hard and its secretion consisted of clear watery fluid with yellowish deposit on standing. In addition to the local mastitis there was some systemic disturbance shown by shivering, and coldness of the ears and horns; respiration was described as fair. The animal died the following evening —the third day after the onset of symptoms. Unfortunately a detailed *post-mortem* examination was not made but the lungs were congested, there were signs of a fibrinous pleurisy and an excess of fluid in the peritoneal cavity.

A sample of udder secretion taken on the second day of illness showed microscopically some cells and groups of Gram-negative ovoid cocco-bacilli, with bipolar staining. Cultures made on the surface of, and in the depth of, ox-blood agar plates grew a pure culture of *Pasteurella septica* after 24 hours' incubation at 37° C. The characteristics of the isolated organism are as follows:—

Morphology. — Gram-negative ovoid cocco-bacilli—mostly regular in size and shape with a few filaments and arranged singly—non-motile —capsulated in broth cultures when tested by the Indian ink technique.

Cultural Characteristics.—Punctiform translucent colonies on agar plates after 24 hours at 37° C., developing slightly larger with faint rings and a greyish colour after four days. Poor translucent growth on agar slope. Growth but no haemolysis on ox-blood agar plates. No growth on McConkey's agar after four days at 37° C.

Acid but no gas was formed in peptone water cultures with the following test substances: glucose, mannitol and sucrose. No reactions were observed with maltose, lactose and salicin after ten days at 37° C. Litmus milk was not altered and indole was formed in peptone water.

Pathogenicity Tests.—Intraperitoneal injections of as small an amount as 0·5 of a broth culture diluted 10^{-5} killed mice in 24 hours—this was an approximate dose of 1,500 living bacteria. About 0·2 c.c. of an undiluted broth culture, when given intranasally to a rabbit under ether anaesthesia, caused death in 24 hours with an intense tracheitis, a pericarditis and congested heart muscle and lungs. *Pasteurella septica* were recovered from the mice and the rabbit.

Infection of the udder with pasteurella is comparatively rare. Schlotthauer and Hardenbergh (1926) record the case of a cow which developed mastitis with no constitutional disturbance one week after calving, and, although the cow recovered, the affected quarter never fully regained its function. An outbreak which developed in nine of twelve cows, two to three weeks after a benign attack of foot-and-mouth disease, is described by Lesbouyries *et al.* (1938). These animals showed some constitutional disturbance by a loss of appetite and an increase in temperature. Their udders were swollen, hot and painful, and the secretion became serous and yellow in colour. The cows recovered, leaving the infected quarters hard and almost functionless. Pasteurella, which were pathogenic for mice and rabbits, were isolated from the milk. A similar condition occurs in sheep in America (Marsh, 1932) in which the onset is sudden, with a high fever and an acute inflammation of one side of the udder. In most cases, the ewe recovers with permanent loss of the affected part of the gland.

The question of the origin of infection arises, for, in the case herewith recorded, there were 33 cows and other animals on the farm, but there had been no other disease of a similar nature. Carriers of pasteurella are probably more common than are suspected and these sporadic cases of pasteurellosis are to be regarded as endogenous in their development. In his description of pasteurella mastitis in sheep, Marsh suggests that the bruising of the

udder by the lamb is a predisposing factor, as the disease occurs late in the season—August and September—when the lambs are big and heavy. The virus of foot-and-mouth disease is presumed to have played a similar rôle in the development of the cases of bovine mastitis recorded by Lesbouyries *et al.* There is thus an indication in both of these records of the belief that the disease develops from within the animal body. This case and those referred to should, therefore, be regarded as general disease processes with mastitis as a local manifestation. The pathogenesis of infective diseases in general and mastitis in particular has been studied widely and mastitis may be regarded either as a local infection arising externally via the teat canal or as a local manifestation of a general disease. There is general agreement that the former is correct in regard to the common contagious form of mastitis due to *Str. agalactiae*, whilst in other forms the udder may be infected from some internal source. In such cases mastitis develops because of some local disturbance which may be non-specific in itself. This is the accepted view in mastitis due to the tubercle bacillus, mastitis streptococcus Group II (Minett *et al.* 1932) and probably also *C. pyogenes*. The two latter types of bacteria may occur in maiden heifers in which teat infection is unlikely and *C. pyogenes* is to be found in other tissues. It is probable that the pathogenesis of mastitis due to other organisms such as *F. necrophorus*, *Bact. coli*, *Br. abortus*, etc., is similar.

As has been pointed out before, sound methods of control depend on a full understanding of the bacteriology, pathogenesis and epidemiology of an infective disease.

I am indebted to Major W. H. Wortley, M.R.C.V.S., for the supply of udder secretion and the clinical data.

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An eagle captured in the Alps, which was put into a cage at Aosta railway station, had a leg broken during its capture, and this apparently caused the bird much suffering. The local veterinary surgeon, moved to pity, amputated the broken leg and substituted a skilfully made wooden one. The newspapers say that the royal bird bore the operation well, and is now quite happy, jumping about on its artificial leg, and showing its gratitude to the surgeon. It gets into a rage only when it sees the newsboy running about on the platform and crying the news—which, says the Milan correspondent of *The Times* in forwarding the above message, shows how intelligent is the bird of Zeus.

Notes on the Control of Animals for the Tuberculin Test

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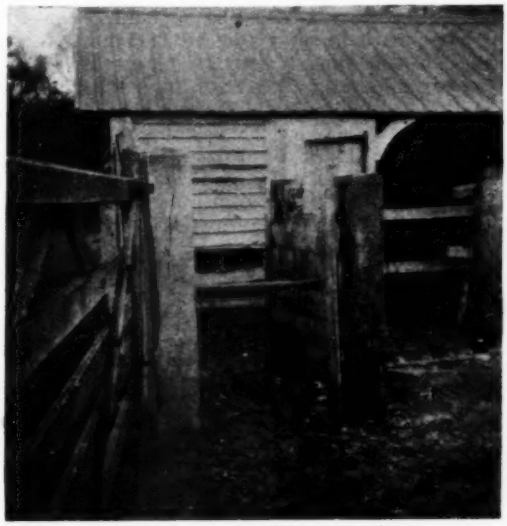
Reading

In view of the considerable interest which has been aroused by various articles and letters concerning the technique of the tuberculin test I thought the following brief notes might be useful.

First I should like to describe three types of "crush" for controlling cattle. Each one is different and each has been made to suit the particular requirements of individual farms.

No. 1.—The simplest one can be made at the cost of a few shillings and is most efficient. It was put up to enable me to test a large number of Shorthorn heifers. It was constructed along the inside of one wall of a wooden enclosure which was at the corner of a field. All the animals were driven in first; run up one at a time into the crush and out at the gate. The photographs show the general lay-out. Each animal when in the crush is prevented from moving forward by a bar, which is movable, and from going backwards by a chain hooked on to a staple. One man stands in front of the bar and noses the animals as they come up. He removes the bar and lets them out when the test is finished. In this way it is surprising how quickly a large number can be tested.

1A.—Crush viewed from exit end



1B.—Crush viewed from entrance end

. . . . . .

No. 2.—The next form is more elaborate, as is shown in the photographs. A large yard has been divided into two by a central fence and down the whole of one wall a further small division is fenced off, ending in the crush. This is not divided by the fence, but passes one end of it directly from one yard to the other. The animals are driven in batches from the right-hand yard into the smaller division and so up into the crush which is in the left-hand yard. The animals are prevented from going forward

2A.—The Crush as approached from right-hand yard

2B.—The Crush itself, showing door closed in front, and sliding panel moved back

by a door and from going back by a bar. There is also a sliding panel at the side which is opened to allow the animals to be nosed and tested.

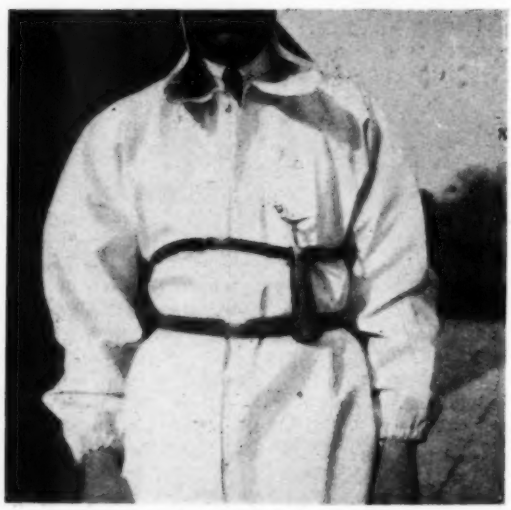
. . . . . .

No. 3.—The last type differs yet more from either of the foregoing; it was made to deal with some extremely wild Red Polls that had never been handled. It consists of a narrow box, somewhat similar to a single motor-horse box but smaller. It is made on detachable wheels and is moved up to the door of the shed

3A.—Side view, sliding panels half open

into which the animals have been driven. There is a strong door in front and behind, and a wide sliding panel on each side. It was found necessary to put on a roof as the animals tried to get out through the top. The animal to be tested is driven out of the shed into the crush and the door closed behind. One panel is moved back and the animal roped or nosed, or if very wild it can be roped through the roof. When this is done the panel on the opposite side is moved back and the test carried out. In this way the wildest animal can be efficiently and quickly controlled.

3B.—View from exit end



4.—Leather holder for syringe in position

Finally may I describe a holder for the syringe with finger grips which I have found most useful when there is no one to hold an instrument tray. It consists of a strap which goes round one's chest, and attached to it is a leather cylinder closed at the bottom and open at the top. It is about four inches long, the diameter at the top being three-quarters of an inch and the diameter at the bottom two inches. (See photograph.) I find the best position for the cylinder is approximately over one's heart, and the syringe drops into it, resting on the finger grips.

STAFFORDSHIRE SCHEME FOR THE TREATMENT OF ANIMAL CASUALTIES IN WAR-TIME

The *Birmingham Post* of May 27th reports that the importance of setting up a county A.R.P. service for the protection of animals and the treatment of animal casualties in war-time was emphasised at a recent conference of veterinary officers at Stafford. The meeting, over which Alderman R. G. Patterson, Chairman of Staffordshire County Council presided, was called for the purpose of taking steps to inaugurate such a service.

Major W. J. Brennan DeVine, President of the National Veterinary Medical Association and Chief Veterinary Officer of Birmingham, said there was no general organisation in the Midlands for dealing with animals during a crisis. He suggested that special authority should be given to veterinary surgeons on all A.R.P. organisations to decide whether an injured animal should be treated or slaughtered.

Colonel E. A. Cameron, County A.R.P. Officer, said that in time of war more horses would be used because of shortage of petrol and restrictions on motor vehicles. Animals would have to be looked after very carefully. He wanted an organisation to be started so that plans could be made for the establishment of first-aid posts for animals throughout the country.

Mr. A. V. McCullough, Home Office Regional Officer at Birmingham, stated that the county of Stafford presented one of the most difficult propositions in civilian defence in this country, because certain places were highly developed industrially and others agriculturally.

On behalf of Staffordshire branch of the National Farmers' Union, Mr. A. L. Strickland said that farmers would be only too willing to assist in supplementing the personnel for the treatment of animals.

Sir Joseph Lamb, M.P., observed that he took the view that the Midlands were as vulnerable as any part of the country. London, he thought, would not be attacked before the Midlands, because everyone knew that London was well defended.

A small committee was appointed to take initial steps to establish an organisation. The members are Mr. F. A. Davidson, B.Sc., M.R.C.V.S., Major A. A. Forsyth, M.R.C.V.S., D.V.S.M., and Colonel R. W. Mellard, D.S.O., M.R.C.V.S.

Pathological Changes in the Testicle, with Special Reference to Impotence in the Bull

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[Translated (unabridged) from *Münch. tierärztl. Wschr.* (1937.) 88. 437-441, 448-453, 461-465. 19 figs. (50 refs.)]

I.—General Considerations.

There are few recorded observations on the correlation of the sperm picture and pathological changes occurring in the testes. Such examinations as have been made have been limited to the examination of spermatozoa in sections of diseased testicles (Simmonds, Corres, etc.), or in testicles obtained from human patients suffering from generalised, acute or chronic conditions. It is obvious that such material, usually obtained after death of the subject, is unsuitable for studies on fertility. The material studied in the present investigation was obtained from bulls which were perfectly healthy but which were known to be infertile. The testicles were obtained after castration or at death, being placed in a fixative solution immediately after excision.

The "descensus testiculi" in the bull is practically completed during the last stage of the foetal period, and under normal conditions the testicles remain in the scrotum throughout the whole life of the animal. During the first few months after birth any increase in size is comparatively slow, but as soon as sexual maturity is reached development is considerably accelerated. Spermatogenesis in the bull apparently commences at six to ten months of age (Zschokke, Kronacher, Krallinger, Lagerlöf), some variation occurring according to the breed, date of weaning, and method of feeding. There is considerable variation in the size of the testicles in different individuals and in different breeds of cattle. Ellenberger-Baum quotes the following figures: 12 to 14 cm. long, 6 to 7 cm. thick, and weight 250 to 300 grammes. The last figure appears to be incorrect, at least for Swedish breeds, Lagerlöf's figures varying from 250 to 500 grammes with an average of 350 grammes for healthy bulls.

The inside diameter of the seminiferous tubules in adult bulls, according to Schmaltz, varies from 120 to 200 μ, but Lagerlöf in his work found that the width varied from 170 to 300 μ. These differences could probably be explained by the different methods adopted for fixation of the testicles. Most workers are agreed that the process of spermatogenesis in the bull is similar to that described for man and other mammals. During foetal and infantile life the testicle consists of a compact cell stroma lined by a thin membrane and containing two kinds of cells, *viz.*, several layers of small cells with a minute, round or oval, darkly-staining nucleus, between which are dispersed larger lighter-staining cells. In the new-born calf only one layer of small cells can be seen, between which some large cell elements can be demonstrated. The nuclei of the latter are poor in chromatin and the cells are apparently degenerating.

There is some difference of opinion as to the significance of the small cells and various authors give them different names, *e.g.*, "follicle cells," "vegetative testicle cells," "undifferentiated testicle cells," "undeveloped testicle cells," etc. One view is that these "undifferentiated testicle cells" later form all the cells of the seminiferous tubules, the spermatogonia and the so-called "basic cells" of Stieve. The spermatogonia and their daughter cells produce the spermatozoa, whilst the "basic cells" perhaps play some part in the metabolism of the interior of the tubules. The undifferentiated testicle cells undergo certain changes during division and cannot be differentiated from spermatogonia. The large cells present in the infantile testicle, which arise from the undifferentiated testicle cells, have been termed by Schinz and Slotopolsky "abortive spermatogonia" since they disappear before maturity is reached. When sexual maturity is reached there are from five to ten layers of germinal cells in the tubule.

In the calf the majority of the undifferentiated germinal cells are replaced by spermatogonia at the age of five to seven months. At eight months a considerable part of the tubular epithelium is still in the undifferentiated stage. In one part of the tubule two to three undifferentiated cell layers may be seen whilst in another the formation of spermatogonia has commenced. Usually some spermatozoa have been formed, and can be identified in the epididymis. By the ninth month most of the tubules are well developed and from the tenth month onwards spermatogenesis is generally taking place in the whole testicle, while the epididymis is well filled with spermatozoa. The age at which senile changes take place in bull's testicle is not known, but Lagerlöf's observations indicate that senile atrophy of the testicle occurs when the animal is 13 to 16 years old.

In the testicles of adult men tubules in which no spermatogenesis is taking place are sometimes seen; these may never have developed, or they may have degenerated. Most workers are agreed that it is quite normal to find atrophic

tubules, since the testicles are extremely susceptible to various external influences. Branca has named this condition, which he maintains is quite specific to the human testicle, "caractère individual." Nemiloff and Richter, however, suggest that such a degeneration in the seminiferous tubules is a normal physiological process in most mammals. In examining the testicles of several species including the bull, they found that tubular degeneration was frequently present. As, however, these investigators obtained their material from abattoirs, it was impossible to determine whether or not the testicle had functioned normally during life. On the other hand, one quite commonly finds several tubules which are not functional, but this does not mean that the whole testicle is without function. Nevertheless, there can be no doubt that tubular degeneration is generally the result of a pathological process.

Changes in the sperm picture are in most cases consequent upon diseased conditions of the testicle, epididymis and accessory glands or on functional disturbances of these organs.

The more important pathological changes of the testicle leading to disturbances in spermatogenesis are probably:—

1. Hypoplasia.
2. Degenerative changes.
3. Inflammatory changes.
4. Fibrosis testis.

In the bull Lagerlöf found that specific inflammations or tumours are not nearly of the same importance as other changes mentioned above.

The material used in the present investigation consisted of the genital organs of bulls in which it had been possible to observe the sperm-picture during life for longer or shorter periods. Bouin's solution was used as a fixative, and after fixation pieces were treated with methyl-benzoate-celloidin and then embodied in paraffin wax. Sections 5 to 10 μ thick were stained with Heidenhain's haemotoxylin-eosin or Hansen's haemotoxylin-picrofuchsin. A few were stained by Weigert's elastic method. For fat estimations the fixatives used were Fleming's solution or 10 per cent. formol; pieces were then embedded in gelatine, cut on the freezing microtome and stained with Sudan III or Sharlach-red. In several cases pieces were fixed in absolute alcohol for staining with Best's glycogen stain. Sperm smears were stained immediately after obtaining the sample.

II.—Hypoplasia of the Testicle.

Survey of the Literature.—Many investigators have examined the testicles of individuals ranging from one up to 18 years of age. The most extensive observations are those of Kyrle. In his opinion the normal infantile testicle is one in which the seminiferous tubules are densely packed and touching one another with very little interstitial tissue present. In the hypoplastic testicle there is marked development of interstitial tissue which prevents the tubules from touching. Out of 110 cases examined, he found only ten in which he regarded the testicles as being normally developed. Mita disagrees with Kyrle's interpretation, and suggests that in the testicles examined by the latter the changes were due to secondary symptoms following chronic diseases which generally were the cause of death, and were not due to congenital hypoplasia. The work of several other investigators suggests that the testicles of young boys do not develop *pari passu* with age. Furthermore, the method of fixation is of the utmost importance in such examinations. Formol is a bad fixative for testicular material, and where used it is quite possible that certain changes supposed to be pathological are in reality artificially produced. Kyrle's definition of "hypoplasia testis" is: a testicle containing too much interstitial tissue. Such a testicle is not developed in proportion to the age of the individual and the retardation can be referred to disturbances during the foetal stage of development. Schinz and Slotopolsky define hypoplasia of the testicle as the state when the testis has remained in the infantile stage and never reached the stage of spermatogenesis. They add that the hypoplasia may be congenital or post-natal. In the opinion of these investigators the testicles of cryptorchids are in a hypoplastic condition. Hypoplasia testis is described by Tandler, Gross, Thorek and Altmann in connection with eunuchism. Benda describes hypoplasia in dwarfs, and Oize and Oberndorfer mention that they commonly found hypoplasia in tuberculous men at the age of 15 to 20 years. Stefko observed hypoplasia of the testes in youths produced through starvation.

Few cases of hypoplasia testis have been reported amongst animals. Schlegel has recorded a case in a boar. W. L. Williams mentions a form of absolute sterility in young bulls and suggests that the hypoplasia was either of congenital origin or was due to a check in development produced by a post-natal infection of the testicles.

Lagerlöf's Experiments

The material for examination was obtained from 25 bulls whose ages ranged from one-and-a-half to two-and-a-half years. All animals were well developed, and at the time of examination quite healthy; except in one case there was no previous history of illness. All served willingly but were sterile. At *post-mortem* examination no significant pathological

changes in the organs other than genitalia were demonstrable. Various stages of hypoplasia testis were present. Some bulls had completely hypoplastic testicles, or testicles in which parts of the testicles were of a hypoplastic character; in these cases there was no production of spermatozoa. In others spermatogenesis was present but was defective.

The cases examined were divided into three groups, according to the degree of development of the testicles.

Group I consisted of eight bulls (Fjäll breed) in which the testicles were completely hypoplastic. The animals were completely sterile and no spermatozoa could be demonstrated in the sperm sample.

Macroscopic Examination. — The genitalia apart from the testicles appeared normal. The testicles were small—average weight, 125 grammes—and firm in consistence. The cut surface had a dry appearance and there was no protrusion of the matrix. The epididymes were small.

Microscopic Examination.—In all the seminiferous tubules, only one layer of germinative cells was present. These rather resembled the so-called "Sertoli cells" or undifferentiated testicle cells. The membrana propria was of normal thickness. The diameter of the tubules varied between 100 and 250 μ. The interstitial tissue was abundant. The tubules in the epididymis were empty.

Group 2 comprised nine bulls, six of which were completely sterile, whilst three were of low fertility. Samples of semen from bulls which had produced offspring gave a count of 100,000 spermatozoa per c.mm. The spermatozoa were degenerated, or in some cases immature. Some of the bulls were completely aspermatic. Giant cells were present in the ejaculation.

Macroscopic Examination.—Nearly a half to two-thirds of the seminiferous tubules were in an undeveloped state, and possessed only one layer of undeveloped testicle cells which resembled Sertoli cells. The remaining tubules showed commencing spermatogenesis. In some tubules there were spermatogonia, in others spermatocytes in various stages of development. In the sections of the testes of three bulls numerous giant-cells could be seen in the tubules and in the epididymis. The fact that giant-cells were present in the tubules suggests that some check prevented the germinative epithelium from reaching the stage of spermatogenesis. As a result there was degeneration of the epithelium with the consequent formation of giant-cells. In several of the tubules a hydropic degeneration, or more commonly large vacuoles, could be seen in the spermatocyte layer, which were the remains of degenerated spermatocytes. Inflammatory changes or fibrosis were not observed in such testicles. The diameter of the tubules varied between 110 and 250 μ, average 180 μ. The epididymes were devoid of spermatozoa or contained only markedly degenerated forms. The interstitial tissue appeared to be normally developed.

Group 3.—In this group eight bulls were examined. All were completely sterile and showed marked changes in the sperm picture. The count varied between 50,000 and 150,000 per c.mm.; motility was decreased, the number of degenerated forms was very high, and in the semen from the majority of the bulls an enormous number of immature spermatozoa were present. The testicles appeared normal in size, weighing about 300 grammes; their consistency and the cut surface seemed normal.

Microscopic Examination.—Only a proportionately small number of the tubules had remained in the undeveloped stage. In most, there was a germinative epithelium several layers thick, and there was evidence that spermatogenesis had taken place though not so actively as in the normal testicle. In some places the spermatocyte layer showed hydropic degeneration and the formation of large vacuoles; in the spermatid layer there was development of giant-cells. Symptoms of inflammation or fibrosis were not perceptible. The number of spermatozoa present in the tubules of the testes and of the epididymes was generally small. In several of the bulls, giant-cells were present in the epididymis. The diameter of the tubules varied from 130 to 310 μ, average 220 μ. The interstitial tissue seemed normally developed.

III.—Discussion.

The testicle is an organ which reaches full development only at puberty of the individual. Therefore, the term "hypoplasia" could be applied to certain post-natal disturbances in development. But Lagerlöf considers that this term should be confined to testicles which remain in a totally or partially undeveloped state. It must be admitted, however, that in certain cases it is very difficult, sometimes impossible, to differentiate by means of microscopic examination whether changes in the testicles should be regarded as hypoplasia or as degenerative atrophy. A decision is made all the more difficult, since degenerative changes may quite well take place under certain conditions in an undeveloped testicle. In attempting to answer the question the history of the case and the sperm picture are often a useful guide.

In the present study an attempt has been made to classify the material into three groups according to the degree of testicle development, but an exact limit between Groups II and III could not be defined. In accordance with the view of Schinz and Slotopolsky, the diameter

of the tubules and the degree of development were found to be always exactly parallel. The average diameter of the seminiferous tubules in Group I was 160 μ, in Group II 180 μ, and in Group III 220 μ. There seems no doubt that the testicles of the bulls in Group I were true cases of "hypoplasia testis." It seems justifiable to diagnose hypoplasia in Group II, since the majority of the tubules were quite undeveloped, although evidence of degeneration in the epithelium of several of the tubules was seen. In Group III, there is some doubt as to whether hypoplasia was present or not, since the number of undeveloped tubules was greater in this case than in Group II, and since there were extensive degenerative changes in the germinal epithelium. In Group III, however, there are several facts which indicate that one is dealing with undeveloped testicles and not with fully developed organs which have later undergone degeneration. This view is supported by the history that the bulls had never been fertile. Several cases were observed in which the sperm picture had been comparatively unchanged for a long period and showed only small numbers of spermatozoa with a high percentage of pathological and immature forms. Microscopic examination shows that a number of tubules had remained in an undeveloped stage. Of course tubules may be found in which there is only one cell layer of germinal cells.

This results from degeneration of the testicle. In such cases the walls of the tubules are thickened, usually as a sequel to the degeneration process. But this interpretation cannot be applied to the undeveloped tubules seen in Group III. The tubules containing only one layer of undeveloped testicle cells, as observed in Group III, must be regarded as undeveloped seminiferous tubules and the probability is that such testicles have never achieved complete development. One is entitled to term a testicle "hypoplastic" or "undeveloped" when the germinative epithelium cannot be clearly differentiated, and when mature sperms are not being formed, even though it is impossible to demonstrate completely undeveloped tubules. But this term can only be justified when the history and the results of more than one sperm examination support the assumption. There are two possibilities regarding the causation of the degenerative changes in the germinative epithelium seen in Groups II and III. One very likely possibility is that the factor which inhibits the complete development may operate over a long period of time, or even for ever, so that the cells lose their ability to divide, and ultimately die on reaching a certain age. In this way hydropic degeneration and vacuole formation may originate in the spermatocyte layer. When the spermatids perish they become separated from the stratum and probably flow together to form giant-cells. The second possibility is change of some kind producing degeneration in the germinative epithelium of an undeveloped testicle.

SUMMARY

The cases described in this article are not improbably examples of true "hypoplasia testis" caused by foetal or infantile developmental inhibitions. It is not thought that the pathological changes described were due to degeneration in fully developed testicles after puberty was reached. The testicles in Group I remained in a totally undeveloped state. In some of the testicles in Groups II and III spermatogenesis was present in a few of the tubules, but the production of fertile spermatozoa was inadequate.

Further Observations on Fowl Paralysis

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It was reported in the *Veterinary Record*, August 13th, 1938, that *Streptococcus viridans* and *Staphylococcus aureus* had been isolated from the nerves of fowls affected with fowl paralysis. In one case *Bacillus pyocaneus* was isolated.

Further observations have been made on fowls received from poultry plants in East Anglia. Of 58 paralysed fowls, *post-mortem* examination (including microscopical work) resulted in the demonstration of heavy coccidial infestation in 49 (*i.e.*, 84 per cent.) tapeworm (Davainea) in five, roundworms in two and nephritis in one, respectively. It was also observed that in 37 of the above fowls, all of which were infested with coccidiosis, coccoid organisms were present in the affected nerves.

It was further observed that many of the fowls examined showed a diffuse muscular weakness rather than a definite paralysis and that this symptom occurred more in the later months of the year. Affected fowls tended to recover. In many instances it was found that the naked-eye appearance of the nerve bore no relationship to the occurrence or absence of paralysis for in some fowls which had shown little or no evidence of paralysis during life, *post-mortem* examination revealed thickened and fibrosed peripheral nerves. In some typically paralysed cases the peripheral nerves were oedematous.

Examination of the spinal fluid (withdrawn from narcotised cases) was carried out and in several cases coccoid organisms were isolated. The fluid also contained many small round cells. Chemical examination of the spinal fluid from paralysed and parasitised fowls was also carried out and positive reactions for the presence of protein (soda-lime and xantho-proteic tests) were obtained.

These findings are in keeping with the view that in some cases fowl paralysis, in its initial stages, resembles a myelitis and may explain the drooping of the tail feathers commonly seen early in the course of the disease. They may also explain, in some measure, the recovery of fowls before actual paralytic symptoms develop, the disease process failing to progress beyond the primary infiltration of the sub-arachnoid spaces.

In the field fowl paralysis was found repeatedly associated with coccidiosis. Four instances taken at random are:—

Farm A.—A flock of birds were on free range, and housed in slatted floor houses through which the droppings fell freely to the ground. Periodically the houses were moved, leaving patches of contaminated ground over which all the birds ran freely. *Post-mortem* examination of selected specimens of paralysed and non-paralysed birds showed coccidiosis in all. The spinal fluid of many of the paralysed birds as well as of certain of the heavily parasitised but non-paralysed birds was heavily infiltrated with lymphocytes. It was ascertained that many of the paralysed birds had been bred from chicks bought in from an outside source, and that a heavy mortality from chills had occurred among them.

Fig. I.—A bird from Farm A, suffering from dropped wing and generalised muscular weakness, a survivor of the batch of chilled chickens. Autopsy revealed heavy caecal coccidiosis, and Gram-positive cocci were isolated from the nerve trunks. Attempts to examine the spinal fluid of this bird were obscured by haemorrhage.

Farm B.—Fowl paralysis was unknown on this farm before 1937, though coccidiosis was common. For the latter reason the fowls were reared on the side of a hill in folding units which were moved up from marshy ground at the foot to the summit. During the owner's absence in 1937 the units were moved in the opposite direction. All went well until the birds reached the marshy ground at the foot, when fowl paralysis appeared and ran through the birds, causing a mortality of 60 per cent. It seems probable that a heavy accumulation of coccidial oöcysts was present at the foot of the hill which infected the fowls.

Farm C.—On this farm the fowls were kept in an orchard in runs containing about 60 birds. Over a period of six years there had been a continued low incidence of paralysis. Examination of samples of faeces from four pens revealed in three both duodenal and caecal coccidial oöcysts. *Post-mortem* examination showed a very heavy incidence of lymphomatosis diagnosed by the presence of diffuse tumour formation on the mesentery and lymphoid tumours in the liver and ovary. Duodenal and caecal coccidiosis was present in every bird examined.

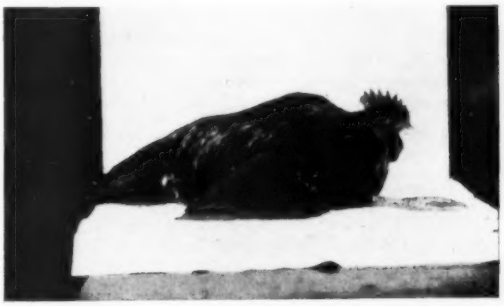

Fig. II.—A cockerel from Farm C, suffering from generalised paralysis and "pearly eye" (leucosis of the anterior chamber.) *Post-mortem* examination revealed lymphomatosis, duodenal coccidiosis, and infiltration of the spinal fluid with lymphocytes. No organisms were isolated from the spinal fluid or nerve trunks.

Farm D.—There was a widespread incidence of both intestinal worm and coccidial infestations. It was found, however, that the fowls in which paralysis was most common and most marked were pullets bred from hens which were survivors of *Salmonella aertrycke* infection of chicks. Three pullets gave a positive reaction to the agglutination test for the presence of *S. aertrycke*, and from a fourth the organism was actually isolated. *S. aertrycke* is known to pass through the egg. The question arises whether the infection in the adult had predisposed the progeny to intestinal parasitism and paralysis.

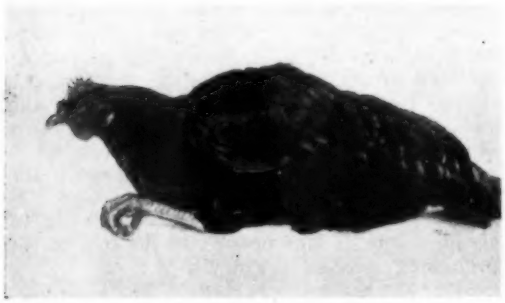

FIG. III.—A pullet from Farm D, showing the paralysed, projected leg often found peculiar to coccidial infestation. Duodenal and caecal coccidia were isolated from this bird, and the sciatic nerves were oedematous. Cultural isolation of the nerve trunks was negative, but the bird gave a positive reaction to the tube blood plasma agglutination test for *Salmonella aertrycke*.

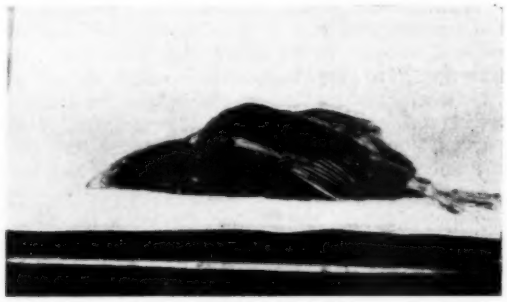

FIG. IV.—Bird from pen receiving parasites plus organisms, found paralysed on January 17th, 1939. It could raise its head if disturbed, but nervous innervation of the wings and legs was completely lost.

These observations support the findings of M. Emmel, which have hitherto not been confirmed in this country.

Emmel stated that "91·3 per cent. of 391 chicks, six to ten weeks of age affected with fowl paralysis, suffered from coccidiosis" and "62 of 98 birds exposed to *Salmonella aertrycke* infection during chronic parasitic infestation developed one of the symptoms of fowl paralysis."

Some experiments were now carried out.

Eight birds were selected from a source known to be free of fowl paralysis. Two fowls were fed 10 c.c. of an emulsion (500,000,000 per c.c.) of a subculture of each of the originally isolated *Streptococcus viridans* and *Bacillus pyocaneus* respectively. After two months the birds were weighed, when it was found that the streptococci-fed fowl had decreased in weight from 4 lb. to 3¾ lb. and the *Bacillus pyocaneus*-fed fowl from just under 5 lb. to 4 lb. 6 oz. No symptoms of paralysis appeared, however, and after three months the birds were narcotised with chloroform, examined and killed before recovering consciousness. Both had a rugously thickened intestine but bacteriological and histological examination of the great nerve trunks yielded negative results. A few cells were found in the spinal fluid.

The six remaining birds were divided into two lots of three and received in their food coccidial oöcysts and worm eggs and coccidial oöcysts and worms eggs plus subcultures of the above organisms, respectively.

Two months later one bird from each pen was narcotised and killed. In the bird which had received parasites alone enteritis due to coccidiosis, nephritis and an oedematous condition of the sciatic nerves were found. Colonies of staphylococci were isolated from the nerves. In the bird which had received parasites plus organisms enteric lesions were noted but no parasites were present. The sciatic nerves, however, were oedematous and one mixed colony of Gram-negative bacilli and Gram-positive cocci was isolated from them. The spinal fluid contained a few small round cells.

Sixteen days after the examination was made another fowl which had received parasites plus cultures suddenly became completely paralysed. It died five hours later. The great nerve trunks were infiltrated with round cells, some duodenal coccidia were present in the intestines, and lymphoid tumours were found in the intestinal wall and ovary. An attempt to examine the spinal fluid was unfortunately unsuccessful owing to haemorrhage.

The findings in these birds tend to confirm the previous laboratory and field observations. Fowls may be affected without showing any clinical symptoms, except, in certain cases, a drooping of the tail feathers. The birds which received parasites alone were as likely to become paralysed as those receiving parasites plus organisms, for previous observations indicated that paralysis (or lymphomatosis) could, in some instances, be induced by any agent (*e.g.*, coliform organisms) passing through the intestinal mucosa following its destruction by parasites. The higher incidence of organisms in the food of the fowls receiving parasites plus bacteria should, however, have caused paralytic (or lymphomatosis) symptoms to have appeared earlier; and this apparently had occurred.

It is possible that the experiments were begun when the birds were past the age at which they are most susceptible to paralysis. It is proposed to repeat the experiments on a larger scale in which blood-related birds will be taken and divided into two flocks. One flock

The Veterinary Record
June 17th, 1939.

The Royal College, the "National," and the Loveday Report

EARLIER this session we devoted considerable space to the appraisement of the Inter-Departmental Report on Veterinary Education. Simultaneously other professional bodies were engaged in similar consideration and it was with some disappointment that the profession realised at the turn of the year that there appeared to be a not inconsiderable gap between the first views on this report formed by the Councils of the Royal College of Veterinary Surgeons and the National Veterinary Medical Association. Since then the interest of the profession has scarcely abated; discussion has continued at Divisional meetings, in committees of the "National," at the Schools and in committee and Council of the Royal College. In January a resolution was passed by the Council of the Association accepting the main recommendations of the report but this was accompanied by the expressed intention of the Association to strive for the greatest possible professional agreement upon them.

More recently the annual report of the Council of the Royal College of Veterinary Surgeons was issued to members and it became clear that the divergence between the views of that body and those of the "National" was much less than was at one time anticipated. It was thus possible for the deputation from the Association, which was subsequently received by the Royal College at a special meeting of its Council, to confine itself largely to a consideration of the few outstanding points of difference. A special committee of the Association drew up a memorandum, the contents of which are published in the body of the minutes of the meeting detailed later in this issue. We commend a perusal of these minutes to our readers.

As befitted such an historic occasion—the first time that a deputation from the National Veterinary Medical Association has been received by the Royal College of Veterinary Surgeons—the views of the Association were expressed both clearly and concisely. Although no immediate discussion of these views ensued our members will note with pleasure that not only did the President of the Royal College promise that the views of the "National" would "be dealt with fully before we draw up our final report," but he also added "The points that you raise, I think I can say beforehand, will receive very favourable consideration." The profession will join with us in expressing the hope that this will be the outcome of this historic meeting.

will be kept under normal conditions and the other will be artificially parasitised and receive, in addition, the organisms. If paralysis appears only in the second flock the problem will be much nearer to solution.

It is possible that the organisms isolated from the nerves are of no especial significance. The curious association of parasitism with lymphomatosis or paralysis is, however, of interest in view of the findings of other workers. It is hoped these further observations may be of value to those dealing with the disease.

In Parliament

The following questions and answers have been recorded in the House of Commons recently:—

Milk (Bacteriological Examination)

Mr. Pearson asked the Minister of Health whether he will request local government authorities to obtain a standard frequency of milk samples for bacteriological analysis so that possible existence of tubercle bacilli in milk may be effectively traced, and in order to supplement the detection of tuberculosis-infected animals by the veterinary staff of the Ministry of Agriculture?

The Parliamentary Secretary to the Ministry of Health (Mr. Bernays): While my right hon. Friend fully appreciates the importance of the examination of milk for tubercle bacilli, and his Department draws the attention of local authorities to the matter in appropriate cases, the number of samples which it is desirable to take must vary with circumstances, and, on the information before him, my right hon. Friend does not think that it would be practicable or useful to enjoin a standard figure upon all authorities.

Mr. Pearson: Is the hon. Gentleman aware that the number of samples taken for analysis is totally inadequate in some county areas?

Mr. Bernays: My right hon. Friend is continually drawing the attention of local authorities to the importance of taking numerous tests. If the hon. Member has any particular case in mind where that is not being done, I shall be very happy to look into it.

. . . . .

Poultry Industry

Mr. J. Morgan asked the Minister of Agriculture whether it is his intention to proceed with the Poultry Bill before the summer Recess?

Sir W. Womersley: The hon. Member is, of course, aware of the heavy pressure on Parliamentary time this Session. My right hon. Friend, however, is still hopeful that it may be possible to make progress with the Poultry Industry Bill before the summer Recess.

Sir G. Fox asked the Minister of Agriculture whether he can state the approximate number of

samples of blood for the agglutination test for pullorum infection in poultry estimated to be submitted to the laboratory at Weybridge for free examination under the Accredited Poultry Breeding Scheme during the period August 1st, 1939, to February 29th, 1940; whether he can give any estimate of the cost which will fall on public funds in connection with this free testing; whether he can state the capital sum involved in providing any additional equipment for the purposes; and whether he is satisfied that this extension of free service is in the best interests of the poultry industry?

Sir W. Womersley: It is estimated that the number of samples of blood for the agglutination test for pullorum infection in poultry to be submitted to the Weybridge Laboratory for free examination under the Accredited Poultry Breeding Stations Scheme during the present testing season, which began on June 1st, 1939, will be about 400,000. Excluding the cost of permanent equipment, it is estimated that the cost that will fall on public funds in respect of tests during the season will be about £2,000. The additional cost of permanent equipment for the purpose of the free blood tests is estimated at £300. In addition a new block of buildings at Weybridge is to be used partly for blood tests but it is not possible to allocate the capital cost between this and other capital work.

. . . . .

Proprietary Medicines

Mr. Garro Jones asked the Minister of Health whether, in his present consideration of whether further control should be imposed on the sale of proprietary medicines, he will extend his examination to the control of drug sales in general and pay due regard to the desirability, in the interests of public health, of regulating the growing volume of sales of numerous kinds of drugs and packed medicines by persons of no training or qualification to the increasing commercial detriment of qualified pharmacists who have an essential place in our public health system?

Mr. Elliot: I will consider the question whether in the interests of public health any further special control is necessary in regard to the sale of drugs by persons other than qualified pharmacists.

. . . . .

Sanitary Inspectors (Wales)

Major Milner asked the Minister of Health whether he can now state what action he proposes to take to remedy the unsatisfactory conditions to which reference is made in the report of the Committee of Inquiry into the Anti-Tuberculosis Service in Wales and Monmouthshire, especially as regards the low salaries paid to sanitary inspectors and inadequate travelling allowances; the appointment of unqualified persons as sanitary inspectors; the failure on the part of local authorities to accept the advice of their officers; the holding of multiple appointments by sanitary inspectors; the registration of cow-keepers and dairymen without regard to the condition of their premises; and the inadequacy of staff for the purposes of meat inspection and other duties?

Mr. Elliot: As I have stated in answer to previous questions, I have asked for the observations of the local authorities in Wales on these and other issues arising out of the report; and as soon as I have received their observations, I propose to arrange a conference at which these matters will be fully discussed.

CLINICAL COMMUNICATIONS

A Pictorial Record of Orchitis due to *Br. Abortus* in a Bull

J. McNAIR and P. S. WATTS

The literature relative to orchitis in the bull due to *Br. abortus* has been reviewed recently by Lafenêtre and Roman (1937) and Martini (1935). The latter author also gives photomicrographs of the condition as does Moretti (1934*a* and *b*). However, there do not appear to be any series of photographic records of the macroscopic condition as met with clinically and it was considered that, since an opportunity had arisen to obtain such a series, these might be of interest to clinicians.

A bull which had been thriving badly during the summer was noticed in September to have developed a sudden unilateral orchitis and swelling of the right testicle with marked pain and tenderness. The swelling increased and is shown in photograph 1 taken on October 20th. On this day the case was reported to Dr. S. J. Edwards by Mr. D. Moodie, M.R.C.V.S., and a blood sample taken by him when examined for agglutinins reacted to a titre of 1/640. The swelling subsided slightly but on December 26th the testicle was found to have been expressed and was lying on the bedding. The hole through which it sloughed is shown in photograph 2 (flank view) and the testicle itself, a necrotic mass which yielded *Br. abortus* in mixed culture, in photograph 3. The area marked "a" is where the cord, etc., had been attached. The scrotal swelling, as will be seen in photograph 2, remained as large as before expression of the testicle and palpation did not give any feeling of an empty sac.

On January 26th, when photograph 4 (flank view) was taken, the hole was healing by scab-formation, but was still discharging while the swelling had subsided slightly.

The animal had fully recovered by April 14th when photograph 5 was taken. This shows the shrinking of the right scrotal sac which followed the complete subsidence of the swelling, the blood titre now being 1/80.

The mode of infection is not known since the animal had not served any cows known to suffer from *Br. abortus* infection, but since he had been loose in a field where several abortions had occurred, infection by ingestion is a possible explanation.

No treatment was given: the owner would not allow the testicle to be removed surgically as the bull was being used to serve cows which

J. McNAIR and P. S. WATTS: A PICTORIAL RECORD OF ORCHITIS DUE TO *BR. ABORTUS* IN A BULL

Photo 1.—Swelling of right testicle. Oct. 20th, 1938.

Photo 2.—Hole of expression of testicle. Note: Little diminution of size of sac. Dec. 26th, 1938.

Photo 4.—Flank view of healing crater, showing scab formation. Jan. 26th, 1939.

Photo 3.—Testicle as expressed. "A" shows point of attachment of cord. Dec. 26th, 1938.

Photo 5.—Flank view, showing the shrinkage of the right sac following complete healing of the ulcer. April 14th, 1939.

were either vaccinated against, or previously infected with, abortion and was "settling" a normal proportion of them.

References

Lafenêtre, H., and Roman, G. (1937.) *Rev. de Méd. vét.* **89.** 700.

Martini, I. (1935.) *La Clinica Vet.* **68.** 41.

Moretti, B. (1934*a*.) *La Nuova Vet.* **12.** 316; (1934*b*.) *Ibid.* **12.** 465.

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An Unusual Cryptorchid

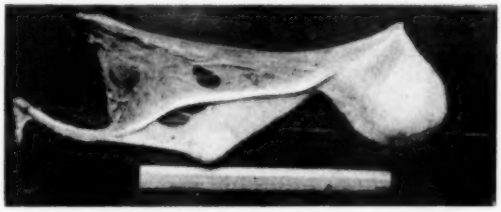
H. P. STANDLEY, Jun., m.r.c.v.s.

Norwich

The subject was a three-year-old Shire colt purchased by the owner as a gelding, which had not been in his possession long before it showed the usual objectionable signs of being a rig. On casting and chloroforming the animal a well-marked scar was present on the near side of the scrotum. It was therefore decided to operate on the off side.

On opening the scrotum and exploring the inguinal canal a long epididymis extending into the scrotum was found. Its tunic was incised and the epididymis exposed. Nothing else could be palpated in the canal. The abdominal wall was therefore perforated with the index finger just posterior to the internal inguinal ring. On first entering the abdominal cavity a tube-like structure, which at first was thought to be a loop of the small intestine, was encountered, but soon the epididymis was hooked up on the finger and drawn into the inguinal canal; gentle traction on this also drew what had been taken to be bowel into the canal. It proved to be the testicle, which was a tubular mass. Further traction on this proved useless as it appeared that something else was holding the testicle up and on again examining the abdominal cavity it was found there was a large cystic formation on the end of the testicle and that this was floating behind and above the opening made in the abdominal cavity. The whole hand was then inserted into the abdomen, the cyst grasped and brought forward into line with the inguinal canal. It was found to be much too large to draw into the canal so was ruptured with the finger, when the majority of its contents escaped outside the body via the inguinal canal. On further traction on the testicle the collapsed cyst was withdrawn outside the body without further trouble and was removed in the usual way with écraseur and the scrotal wound sutured. The colt was kept in a confined space for two days to obviate the risk of prolapse of the bowel and was given gentle exercise on the third day; he was first turned out on the fourth day after operation, from which he made an uninterrupted recovery.

From the enclosed photograph the tubular testicle can be seen just above the 12 in. rule. This portion was 9 in. long and about the same in circumference as small intestine and appeared to be composed of flabby testicular tissue with a small cartilaginous deposit in the end further-most from the cyst. The cyst, which somewhat resembled an ordinary testicle in shape, was attached at one end of this tubular testicle and was thin walled and on filling up with water was found to hold 30 ounces.



Whilst cystic and degenerate testicles are not uncommon in cryptorchids this is the first case that has been encountered by the writer where the cystic formation was so detached from the testicle itself, in all other cases encountered the cystic formation or degeneration being all closely connected and making one mass with the testicle. It has also been noticed in subjects where the epididymis reaches the scrotum that they generally show more complications than those in which an inch or more of the epididymis is just protruding through the internal inguinal ring.

STERILITY: EXPERIMENTS WITH VITAMIN E

The Johannesburg correspondent of *The Times* reports that on May 17th an announcement of wide scientific interest was made on the progress achieved with the new methods for overcoming certain types of sterility in human beings and animals which have been under test for 18 months by the Department of Chemistry of the University of the Witwatersrand in collaboration with leading gynaecologists and in co-operation with the Faculty of Veterinary Science at Onderstepoort Laboratory.

It is said that the results have been so satisfactory that further systematic medical and veterinary tests are to be undertaken. These results have been achieved by the use of vitamin E.*

*We hope to publish further details direct from Onderstepoort at an early date.

* * * * *

Under the horse breeding policy inaugurated by the Dominion Department of Agriculture in 1935, the Department has placed for service in 1939 at the Dominion experimental farms a number of high-class outstanding stallions of the draft breeds to assist in the production of a supply of sires throughout Canada for the improvement of the horse industry.

ABSTRACTS

[Disorders of Reproduction. (Trans. title.) Götze, R. (1938.) *Deuts. tierärztl. Wschr.* **46.** 52. 817-826. (Reprint of Paper presented to the 13th International Veterinary Congress.)]

Although reliable statistics are not available, it appears that breeding troubles, especially in horses, cattle and sheep, are increasing in every country in the world. In Germany it has been estimated that 1½ to 2 million animals are treated annually for sterility, which corresponds to between 10 and 15 per cent. of the total breeding stock. These figures probably also represent the position in other countries which carry on intensive live-stock breeding.

Heredity must undoubtedly play some part in the question of infertility but it is probably only of secondary importance, methods of management, feeding, specific infectious diseases and sporadic diseases being the chief factors concerned.

Sterility or reduced fertility amongst male animals may now be recognised more easily as a result of the improvement in the methods for obtaining semen and examining spermatozoa. One of the greatest difficulties, except perhaps in cows in which there is a comparatively short oestrus period, is to ensure that service will take place at or near the time of ovulation. There is evidence that 20 to 30 per cent. of mares which fail to breed are barren only because they were served at the wrong time and not because of any disease of the reproductive organs of the mare or sire.

Methods of management and feeding have the greatest influence on fertility. Almost all the clinically known diseases of the ovaries, uterus and vagina with the exception of specific infections, can to a certain extent be favourably influenced by environment and feeding. Lack of light and exercise are fruitful sources of infertility especially in male animals. Similarly, properly balanced rations are of the greatest importance. If these factors are attended to there is little likelihood of infertility arising from lack of vitamins or hormones. In any case, hormone or vitamin treatment is at present only empirical treatment since the indications for it are not yet known. A series of controlled experiments in horses and cattle with vitamin E have not convinced the author that it possesses any real therapeutic value.

The increase in specific diseases in breeding stock is mainly due to the fact that the opportunity for infection has become greater as a result of the introduction of intensive breeding and the greater ease with which stock can be moved about. Much could be done to reduce the incidence of such diseases as Bang infection, infectious vaginitis, trichomonas infection, etc., by paying strict attention to hygienic measures, isolation of infected animals, treatment, etc. The non-specific diseases affecting breeding stock are usually the result of mal-treatment at the time of parturition or shortly afterwards; using dirty instruments, hands, etc., and could be greatly reduced by employing better hygienic measures. For local treatment of the ovaries, uterus and vagina, ovarial massage as proposed by Hess and the iodine treatment as originally proposed by Abrechtsen still give the best results.

J. A. N.

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[Prolonged Injections of Male Sex Hormones into Normal and Senile Male Rats. Korenchevsky, V. and Hall, K. (1939.) *Brit. Med. J.*, Jan. 7th., 4-8.]

In human medicine it would appear that large doses of the male sex hormones have been used to combat senility. The object of the experiments reported in this paper was to investigate the possible favourable and toxic effects of varying doses of these hormones (androsterone, dehydroandrosterone, and testosterone propionate) on senile and on normal adult male rats.

The injections did not noticeably affect the appearance of behaviour of the senile rats (14 to 18 months old). After large doses (7·5 mg.) of testosterone propionate the fur of the normal adult rats (137 to 174 days old) became rough and dirty, and a marked increase in nervous excitability was also noticed, but nothing abnormal was recorded with smaller doses (0·75 mg.) of this hormone or with the other hormones used.

All the hormones depressed in varying degree the development of the testes but spermatogenesis was present in most cases. Since the depressing effect of male hormones on the secretion of gonadotrophic hormone by the anterior pituitary is well established, the changes obtained in the testes may most probably be explained by this decreased activity of the anterior pituitary. Development of the secondary sex organs was unexpectedly depressed by androsterone and dehydroandrosterone but not by testosterone, and was considerably stimulated by testosterone propionate. Other changes observed in the injected animals were: increased involution of the thymus; decrease in the actual weight of the liver, without histological changes; possible stimulation of the kidneys; some lipoid depletion in the adrenal cortex; nervous excitability and decreased fat deposition, and decreased gain in body weight.

The authors consider that their findings do

not upset the hypothesis that the sex hormones are important in the prevention of pathological senility in man.

N. J. S.

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[Studies on the Virus of Rabies. Gerlach, F. (1938.) *Zschr. InfektKr. Haust.* **53.** 4. 279.]

The author describes fine granular bodies which can be shown by suitable technique to exist in large numbers in the salivary glands and fluids of the meninges and serous cavities of animals infected with street or fixed virus. Identical granules are found in the brain and spinal cord and they resemble those seen in the Negri bodies. The author considers these granules to be the virus and has been able to cultivate them on cell-free media and transmit the disease at the eighth passage.

H. H. S.

"TRACING BACK" OF TUBERCULOUS ANIMALS

Hampshire County Council Diseases of Animals Committee report that at its last meeting it decided to draw the attention of the Ministry of Agriculture and Fisheries and the Ministry of Health to the lack of co-operation which at present exists with regard to animals found at markets and slaughterhouses to be suffering from tuberculosis.

The Ministry of Agriculture and Fisheries has now replied stating that after careful consideration of the matter "the Ministry is of opinion that the tracing back of all animals found to be tuberculous in slaughterhouses, and the clinical examination of all contacts, is not only impracticable, but of little value where adult animals are concerned. Exceptionally, however, in cases of congenital tuberculosis in calves, there might be some advantage in tracing back these animals to their dams with a view to ascertaining whether or not they might be amenable to the Tuberculosis Order. I am to say, however, that such cases can only be traced if a request is received by the Ministry through the County Medical Officer of Health, who should in the first place be satisfied that the disease found in the calf is, in fact, congenital. I am to point out that if, in the opinion of the Medical Officer of Health, some check upon the milk supply of the farm of origin of slaughtered adult animals is desirable, the normal procedure of sampling milk for biological test is available under Section IV of the Milk and Dairies (Consolidation) Act, 1915."

The Committee has decided that the attention of the County Medical Officer be called to the matter.

* * * * *

"An acquaintance has sent me particulars of two events which took place just 50 years ago this week," writes "Blythe" in the *Farmer and Stockbreeder* of May 16th. "On May 18th, 1889, in the celebrated case of Ford *v.* Wiley in the Queen's Bench Division, the dishorning of cattle was declared illegal. The same day it was announced at a meeting that the Prince of Wales had discovered a leper employed at one of the largest meat markets in London!"

REPORT

[Central Provinces and Berar. Report of the Civil Veterinary Department for the year ending March 31st, 1938 (McDougall, J. C.). Govt. Printing, Central Provinces, Nagpur, India. Price Rs. 1.8.0.]

The report is submitted by the Director of Agriculture who assumed charge of the department on March 29th, from Mr. J. S. Garewal, I.V.S., transferred to Punjab. It is not stated how long this arrangement was to continue but it was apparently in force on October 19th.

The strength of the gazetted staff of veterinary officers is not clear in the report but it would appear that there are one Deputy Director, two Assistant Directors, one Extra Assistant Director and one Veterinary Investigation Officer, ranking as an Assistant Director. It may be noted that the post of Director was not filled by the appointment of a Veterinary Officer. The strength of the subordinate establishment was ten Veterinary Inspectors and 142 Veterinary Assistant Surgeons.

Disease.—The year was more unhealthy than the previous one, foot-and-mouth disease and black-quarter being very prevalent.

The goat virus method of vaccination against rinderpest is stated to have been very efficacious in dealing with this disease under the supervision of the Veterinary Investigation Officer. Research was carried so far as the limited laboratory accommodation and scanty financial resources of the Province permitted.

It is claimed that for the first time workers in the Province have succeeded in identifying the causal parasites of rhinosporidiosis and coccidiosis. It is reported as a result of tuberculin tests, that tuberculosis in dairy cattle is quite prevalent.

The number of veterinary dispensaries at work in the Province during the year was 104 and there was a notable increase in the work performed. It is recognised that more dispensaries are required. In the meantime, a number of outlying dispensaries in charge of compounders have been established.

There was an increase in the number of cases treated on tour, including a considerable number of castrations.

Cattle Breeding.—During the year a number of cattle breeding farms were transferred from the control of the Agricultural Department to the Veterinary Department. District Livestock Associations have been established and bulls issued with a view to stimulating interest in cattle husbandry.

G. K. W.

ROYAL COLLEGE OF VETERINARY SURGEONS

SPECIAL MEETING OF THE COUNCIL

N.V.M.A. AND THE LOVEDAY REPORT

A special meeting of the Council of the Royal College of Veterinary Surgeons was held at 10, Red Lion Square, London, W.C.1, on Thursday, May 25th, 1939, at 2 p.m., Mr. Geoffrey H. Livesey, President, occupying the Chair. There were also present Lt.-Col. J. W. Brittlebank, Professors J. B. Buxton, J. F. Craig, T. Dalling, Messrs. H. W. Dawes, R. E. Glover, J. Holroyd, Major Hamilton Kirk, Messrs. G. H. Locke, G. P. Male, Lt.-Col. W. S. Mulvey, Professor J. J. O'Connor, Messrs. J. W. Procter, Arnold Spicer, Capt. W. K. Townson, Colonel G. K. Walker, Dr. A. W. Whitehouse, Mr. T. Wilson, Professor G. H. Wooldridge and Lt.-Col. T. Dunlop Young.

The receipt was announced of apologies for inability to attend the meeting from Mr. Dolan, Major Dunkin, Sir F. Hobday, Mr. McIntosh, Capt. Mitchell, Mr. Nairn and Capt. R. Simpson.

The minutes of the meeting of Council held on Thursday, April 27th, 1939, were read and signed as correct.

LOVEDAY COMMITTEE

The PRESIDENT: The next business, gentlemen, is to consider the communications which the Council has received in connection with the Loveday Committee's report. First, there is a communication from the Royal Veterinary College, London.

In reply to Colonel BRITTLEBANK, the PRESIDENT said that these communications were at the moment confidential. Resolving itself into Committee, the Council then considered the following: (*a*) Communication from the Royal Veterinary College, London; (*b*) Communication from the Royal (Dick) Veterinary College, Edinburgh; (*c*) Copy of letter addressed to the Ministry of Agriculture by the Professors of Veterinary Anatomy.

DEPUTATION FROM THE NATIONAL VETERINARY MEDICAL ASSOCIATION

The Committee then adjourned further consideration of these matters, in order to receive a deputation from the National Veterinary Medical Association.

The deputation was introduced by the Secretary and consisted of the following representatives: Major W. J. Brennan DeVine, President N.V.M.A., Dr. J. T. Edwards, Capt. J. R. Barker, Major R. C. G. Hancock, Professor W. C. Miller, Mr. E. Brayley Reynolds, Mr. H. W. Steele-Bodger and Dr. W. R. Wooldridge, with Mr. F. Knight, Secretary, in attendance.

The PRESIDENT: The Council of the College is very pleased to receive a deputation from the National Veterinary Medical Association. This is, I think, the first time a representative body of veterinary surgeons has ever attended a meeting of the Council, so it is somewhat of an historic occasion.

The Council will be pleased to hear the views of your Association on the Report of the Committee of Inquiry into Veterinary Education, and I have no doubt will give you a very careful hearing and give due weight to the views you have to express. We should like in the first place to know what you wish to do in the way of the presentation of your case. Have you one spokesman, or do each of you wish to make some particular point?

Major DEVINE: Mr. President and gentlemen, we are very pleased to come along here to-day, and very glad that you have received us in this way, particularly in these historic walls of your Council Room. We have very carefully gone into this question of the Loveday Report, and have prepared a memorandum upon it. The Secretary of the Association has brought along with him copies of the memorandum, and we should like to read this memorandum for your consideration; and it may help if I pass these copies round so that you can follow our views.

I will call upon Dr. Edwards to read the memorandum to you.

The PRESIDENT: Have you anything beyond this?

Major DEVINE: There may be some questions arising which individual members of the deputation would be prepared to answer. Of course, that is for you, Sir.

The PRESIDENT: Thank you.

Major DEVINE: I will now call upon Dr. Edwards to read the memorandum.

ADDRESS OF DEPUTATION FROM THE NATIONAL VETERINARY MEDICAL ASSOCIATION TO THE ROYAL COLLEGE OF VETERINARY SURGEONS TO PRESENT THE VIEWS OF THE N.V.M.A. TO COUNCIL, R.C.V.S., UPON THE LOVEDAY REPORT

Mr. President and Gentlemen,

We, the members of a deputation from the N.V.M.A., are here to-day in response to an invitation from you, duly communicated, contained in the resolution passed at your special meeting of April 13th last: "That the Council of the N.V.M.A. be asked to appoint representatives to attend the next meeting to lay their views on the Loveday Report before the Council."

Your resolution, as you know, had been actuated by the transmission to you of a copy of a resolution passed by the Council of our Association on January 3rd last following upon

the receipt of a communication from the Ministry of Agriculture and Fisheries intimating that the Minister would welcome the observations of the Association on the main recommendations made in the Report of the Committee on Veterinary Education in Great Britain (the Loveday Report) published on September 27th last. A similar communication, we are aware, was addressed by the Ministry at the same time to the Council, R.C.V.S.

The resolution which was passed by the Council of our Association and was transmitted to the Minister has been published in our official journal, the *Veterinary Record*, and reads:—

> "That this Council, having carefully studied the Loveday Report, expresses its general approval of the major recommendations therein contained. The Council wishes to give further consideration to points of detail arising out of the Report in conjunction with the Royal College of Veterinary Surgeons and the Veterinary Schools, in an endeavour to present a united professional view and by so doing to safeguard the great opportunity which is offered to the profession for further advancement and increased usefulness to the public."

Our Council passed a further resolution to the effect that it hoped that at a later stage it might be possible to call a meeting of all bodies interested in or affected by the Report. A full report of its proceedings was duly published in the *Veterinary Record*. The terms of reply of the Council, R.C.V.S., to the Minister's communication, as approved at your quarterly meeting of January 13th last, were kindly communicated by you to our Association and have duly been published in our official journal. We further understand that you have not yet been able to complete your consideration of the Report, for the reason that as some of the recommendations made by the Loveday Committee affect the relations existing between you and the affiliated Colleges it has been necessary for you to communicate with the authorities of those Colleges to ascertain their views. Replies from all the Schools, we have been informed, have not yet been received by you.

We would desire on behalf of our Association to thank you for your invitation to lay before you at this stage the views of our Association upon the Loveday Report.

Meanwhile, from your reply to the Minister we are happy to know now that you have accorded your warm approval to a large portion of the main conclusions of the Loveday Committee. Thus far the views expressed to official authority by you and by our Association have been in complete unison. It is our earnest hope that we shall succeed by consultation and mutual discussion in reconciling any divergencies there may be in the views of our two bodies upon those major conclusions upon which you have not yet been able to communicate officially to the Minister.

It will be recalled that it was after strenuous appeal by our Association that veterinary representation upon the Inter-departmental Committee whose Report we have had under consideration was increased, and we were privileged by the appointment of one of our members to sit as an extra member on the Committee. At the express invitation of members of this delegation he attends with us to-day to explain any points in the Report of the Committee the meaning of which may not be apparent to you and us.

Before the Report of the Committee was published and while we had no intimation of any of its contents timely steps were taken by our Association through the machinery of a large and representative Editorial Committee to publish a critical analysis of the Report in a series of editorial articles in the official journal of our Association, the *Veterinary Record*. The course of our actions and the propriety of the steps taken in discharge of a disinterested journalistic duty on behalf of our Association and the profession at large have been fully recorded in that journal. We are happy to reflect that the prominence thus given to this important Report has been the means of bringing it forcibly to the notice of the bulk of the profession—a service which we feel must also have rendered the task of the R.C.V.S. Council much easier in ascertaining, as it must needs have desired, the reactions of its members to the publication of the Report. The enterprise of the journal has also been the means of evoking a considerable mass of published correspondence, from the general tenor of which the feelings of the profession at large upon the Report can, it is believed, be readily gauged.

Conscious that in an electoral respect the R.C.V.S. Council is constituted as fully representative of the profession, to function as its governing body, we would submit nevertheless that in a somewhat different respect the voice of the whole profession is heard more effectually through its present constituent organisation by the N.V.M.A. From a number of our Branches, Divisions and local Societies we have already received for our guidance and consideration resolutions dealing with the Loveday Report. These have been published in our journal, and a copy of them will be read to you if desired. It will be seen that bodies concerned with widely different aspects of professional endeavour—comprising those composed mainly of general practitioners, or of public health officials or of research workers—have expressed hearty approval of the whole of the main recommendations of the Loveday Report. The Council, N.V.M.A. in the resolution which it transmitted

to Government felt therefore that it had expressed fairly the prevailing judgment of the mass of the profession. This judgment, as we have already stated, could not have been interpreted otherwise than that the main recommendations of the Loveday Report commanded general approval.

At an early stage after the publication of the Report, while as yet our Association through its machinery was diligently exercised in disseminating helpful information to its members upon the Report and awaiting their judgment, our Association was, however, much perturbed by the receipt for publication of two resolutions passed by you at your special meeting held on November 2nd last opposing two of the major recommendations in the Report, without assignment of reasons for this opposition. Our Association, and we felt the profession generally, have been anxiously awaiting the publication of the reasons that prompted its governing body to this course of action, which in the minds of many of our members was deemed somewhat precipitate and could not but convey the impression to some members that the Council, R.C.V.S., looked with disfavour upon the whole Report. We are happy to learn, as all of us who have been constantly anxious to uphold the authority of our governing body had anticipated, that this impression was an erroneous one.

It was not until the receipt by our members only six days ago (May 19th) of the annual report of the R.C.V.S. for the past year, that they were made aware of the reasons. During this short interval it has not been possible to ascertain the effect upon members of our Association of the publication of the reasons. The members of this deputation, charged by the Association with expressing these views to your Council, have meanwhile had under close scrutiny the detailed statement of reasons and have prepared in earnest collaboration a memorandum which they believe will commend itself as an expression of the views of our Association upon this statement. This we will read to you at the conclusion of this address. If it contains any passage which is susceptible of provoking resentment in the body we now address, we would apologise in advance. We would only wish to assure our hearers that the language we employ is meant to serve the cause of the future of veterinary education and as we fervently hope, the enhancement in authority of our governing body.

In short, we believe that opposition to the two recommendations in question could only have been lodged when each was hurriedly taken for examination away from its place and not appreciated reflectively as an ingredient in the context of the full recommendations and then admitted as logically inevitable from the impact of the facts as revealed in the evidence heard by the Loveday Committee. That our impression is possibly correct is confirmed by the fact that the resolutions were not transmitted by you in your observations upon the report sent to the Minister of Agriculture and Fisheries.

The reasons briefly that have compelled our Association to express general approval of the main recommendations of the Loveday Report are:—

(i) Veterinary education stands in need of drastic re-orientation and re-adaptation to meet modern needs.

(ii) The facts related in the Loveday Report concerning conditions at the Schools, especially in the matter of imparting practical instruction, reveal a deplorable state of affairs which can only be remedied by liberal Government support and which needs constant close supervision by the governing body of the profession. We regard the recommendations made for practical instruction upon farm animals, both in health and disease, on special farms attached to the schools as fundamental and essential provisions of the Loveday Committee.

(iii) It is of prime importance to bring veterinary education into closer association with other branches of learning and to give members of our profession in the eyes of the public the dignity enjoyed by members of these other branches. This can be achieved only by enlisting the collaboration of the Universities.

(iv) We are determined to uphold the authority of the Council, R.C.V.S., as the governing body of the profession and to increase and broaden it in whatever direction that may be desirable. A cardinal recommendation in the Loveday Report is that made, after judicial analysis, upon the desirability of continuing the one-portal system.

(v) We are not satisfied that one of the supreme functions of the R.C.V.S. should be designated as inquisitorial, as it must be in the discharge of its present statutory obligations of working an external examination system. Rather it is our view that a higher purpose in the interests of the profession is served by exalting the status of the Council to that of a supervisory body, with greatly increased powers of vigilance over teaching facilities at the Schools, as is envisaged in the Loveday Report.

(vi) The system of external examinations hitherto pursued has failed to differentiate between Schools in which facilities for practical vocational training are notoriously absent and those in which some attempt, which is nowhere, however, now adequate, has been made to provide such training. It must give place to some modified system, and we cannot but feel that that recommended in the Loveday Report represents a real improvement.

(vii) In the course of its long history, as your Council is aware, veterinary education in this country has been starved of support from public funds. For the first time, this crippling factor to

our professional development has been recognised by Government, by the promulgation of an independent official enquiry. The amount of financial support recommended in the Report furnished by this enquiry we consider still not to be fully adequate. We regard the conclusions largely in the light of a compromise and we ourselves would have recommended far more generous expenditure to remedy the present deficiencies caused by unsuitable location of the schools, lack of resources for teaching students upon agricultural animals and inadequate staffing, and opportunities for teaching staffs to carry out research. So far as they go, however, the recommendations of the Loveday Report conform to the ideals which we feel generally all members practising our profession have foremost in their mind. We hope no step will be taken by our governing body to thwart the fulfilment of the desires which we genuinely believe are held by the large mass of the profession which is represented by our Association. In that way, too, we feel confident that the best interests of the public at large will be served.

(viii) The N.V.M.A. is now the only organised body within the veterinary profession which has no vested interest in veterinary education and it therefore claims to speak from disinterested motives, in the cause of the advancement of the whole profession.

(ix) At this critical juncture we would press the need, in the face of the conflicting claims of other interests, and for the several reasons we have already stressed, that the profession should join together in presenting a strongly united front to Government in urging acceptance of what we sincerely believe to be the means necessary for the profession's advancement. These means we contend can only be supplied to us when the minimum provisions in the Loveday Report are fully implemented.

. . . . . .

MEMORANDUM

Observations of the N.V.M.A. upon the Resolutions passed at the Special Meeting of Council, R.C.V.S., held on November 2nd, 1938

The reasons for passing the above resolutions given in the report of the Council of the R.C.V.S. for the year ending March 31st, 1939, are quoted below followed by the observations of the N.V.M.A. upon them.

The first resolution passed by the Council, R.C.V.S., was as follows:—

> (1) "That this Council is strongly opposed to the Recommendation contained in Paragraph 29 (i) of the Report that the Charter of the Royal College of Veterinary Surgeons should be amended to provide for the appointment of Direct Representatives of the Universities of London, Liverpool, Edinburgh, Glasgow, and Cambridge on the Council of the College."

This resolution is supported in the annual report by the following reasons, which are underlined in this memorandum to indicate that they are quoted from the annual report, R.C.V.S.:—

(a) *The reason for this decision was that by the provisions of the Charter, the Council as at present constituted is fully representative of the profession. Members of the College only are eligible for election, and they are elected by the votes of the profession, every member of the College having the right to vote. To introduce a number of nominated members would alter its representative character, and the Council feels assured that such a proposal would not receive the approval of members of the College since it is in derogation of the right conferred upon them by Charter of electing the whole Council. . . .*"

In reply to this reason the N.V.M.A. would make the following observations:—

(i) The above paragraph contains much that is superficially quite true, but on close examination it will be readily found, we believe, to lack the evidence which is required to support the R.C.V.S. resolution.

The principle of including members upon the Council, R.C.V.S., who are not elected by the general vote of the profession is already, we believe, in large measure conceded by the statutory nomination of one member each year from Eire elected by the members of the profession within that State. This member virtually becomes a nominee of that State to the Council, R.C.V.S.

(ii) In the first place, the Loveday Report is a document which deals specifically with the subject of veterinary education and not with the discipline of the profession. As the governing body of the profession, no question has been raised regarding the authority of the Council, R.C.V.S., to exercise its present full statutory powers in a disciplinary and supervisory sense. In this sense, we must admit that the Council is probably as fully representative as is possible and necessary through its elected constitution, of the whole profession. We may concede this point even though, as is well known, less than one-third of the members of the College usually exercise their right to vote at any Council election, and, again, the number of candidates offering themselves for election at any given election is usually only a little in excess of the seats vacant, and these candidates are usually drawn from the small field of those members who can most readily afford the time and expense of attending the Council's meetings or have political aspirations and have consequently made their names well known by various means to a wide circle of the electorate. We cannot

admit, in any event, that the small voting strength, in relation to the whole possible, which ensures the election of a candidate is due entirely to the apathy of the electorate. Even though, time and again, it has been stressed authoritatively that the functions of the Council, R.C.V.S., are strictly limited by Charter and Statute, and are almost entirely confined to (1) Registration (including disciplinary) and (2) External examinations at the affiliated Schools (including drafting of curriculum and syllabuses), there is a common and widespread belief in the profession and often in the minds of the candidates themselves (as is evident from their election addresses) that matters of far wider import fall within the purview of the Council. Hence, it has, for example, been a very profitable plea on the part of a candidate for election to the Council to allege that he goes forward as a representative of the practitioners, or of "part-time" men, etc., in the hope of catching the votes of the largest section of voters. Nothing, we conceive, can be more derogatory to the functioning of the R.C.V.S. Council as an academic council, charged with the conduct of professional examinations and, in the future, it is hoped, in terms of one of the main recommendations of the Loveday Report (which the N.V.M.A. has accepted) the general supervision of veterinary education, than adherence, without some modification, to the system which has hitherto prevailed.

(iii) Before making the recommendation which the above R.C.V.S. resolution opposes, the Loveday Report (paragraph 28 (iii)) says: "Means should be devised for interlocking the R.C.V.S., the Schools and the Universities in the supervision of veterinary education." Earlier, the Report says (paragraph 26): "It is of the first importance to bring veterinary education into close connection with Universities. . . ." And again earlier, after stating the parts now played, as they are well known to us, by the three different organisations now concerned in veterinary education—the School, the R.C.V.S., and the University—the Report observes (paragraph 23): "The system is therefore very disjointed and the lack of co-ordination between its different parts is detrimental to veterinary education."

There is, we are convinced, as is apparent from the evidence we have received in the N.V.M.A., an earnest desire in the profession that it ought to rank with other branches of learning and establish closer relationships with these branches. We find it hard to controvert the categorical views expressed in the Loveday Report that this can only be achieved through much closer association with the Universities, and, furthermore, incidentally through a much closer association between the Schools themselves on the one hand and the R.C.V.S. on the other hand. Without direct representation at headquarters, in whatever form the academic council for the very necessary supervision of veterinary education is constituted, we fail to see in what way the Universities can usefully intervene or, indeed, will find themselves disposed to intervene. We cannot conceive of any desire on the part of the Universities to interfere with the functions of the R.C.V.S. as a registration and disciplinary body in the government of the profession. And, in any event, the N.V.M.A. would emphatically set its face against such an attempt if it were to be suggested.

A second supporting reason advanced by the Council, R.C.V.S., to the resolution (1) above is:—

(b) *There is, in any case, in the opinion of the Council, no need for any such innovation, for under the present system the teaching schools have always been fully represented on the Council.*

Upon this the N.V.M.A. would make the following observations:—

(i) The obvious reply to the above is to ask what objection there can be to converting a *de facto* situation into a *de jure* one, if it is one that has long worked well. Parenthetically, we are sorry, however, to have had brought home to us the fact that since the lamented death of Dr. Bradley there has been no member of the staff of the Royal (Dick) Veterinary College on the Council of the Royal College. It is not unlikely that such lack of representation might well recur in future at critical junctures that may be equal in importance in the matter of veterinary education to the present one when that School has not been and is not directly represented.

(ii) The real situation is, however, disclosed in the following passage in the Loveday Report (paragraph 21): "Of the 36 members of the Council for 1937-38 only ten were past or present teachers in the Veterinary Schools; of the 17 members of the Examination Committee eight were such teachers, of whom three were anatomists, two pathologists and three clinicians." The Examination Committee, which is now virtually the Academic Council of the profession, would therefore comprise fortuitously and fortunately, eight expert veterinary educationists, who, however, had not been selected specifically in virtue of their expert capacity to these positions by the profession. Without derogation to their individual eminence, it cannot be contended that they need have been the most competent experts available in their special subjects, while subjects of paramount veterinary importance, such as physiology and animal husbandry, would be unrepresented on this tribunal by expert assessors.

A further supporting reason advanced by the Council, R.C.V.S., to their resolution (1) reads:—

(c) *As to the other point that the five Universities should also be represented by nominated members on the Council, the reason alleged is that without such provision the Council is in danger of "lacking skilled guidance." There is no foundation for this assertion. Members of the profession representing Universities are eligible to be nominated for election to the Council and there is no reason why their election should not be on the same footing as that of other members. The Council is in the fortunate position of having access to all the skilled advice available on matters of veterinary education, and has never failed to seek such advice when necessary.*

With regard to this the N.V.M.A. would make the following observations:—

(i) The reasons which to our mind would compel Universities to seek representation at headquarters if they are to take a more active share in veterinary education are not confined to that given in the above passage, but have been already discussed by us in our answers to the first passage (*a*).

(ii) Moreover, this passage in the R.C.V.S. report misrepresents the relevant expression of opinion in the Loveday Report. What the Loveday Report really says (paragraph 24) is: ". . . Lastly the organisation of the Council of the R.C.V.S. does not specifically provide for the representation of the Schools on the Council and Examination Committee, and there is therefore a danger that the Council may lack skilled guidance in the development of veterinary education." This, to our mind, has a widely different meaning from that conveyed in the R.C.V.S. statement.

(iii) Although it is most likely that under a system of nomination the Universities would confine their representation to the Council to members of their staffs who were already members of the veterinary profession, it is conceivable that the interests of veterinary education might be eminently well served in certain circumstances if a representative was nominated who was not a member of the veterinary profession but was a distinguished educationist or research worker who had long and intimate experience of some aspect such as physiology, in the curriculum of veterinary studies, in which there is now a dearth of experts with veterinary qualifications. We cannot concede the view that the Examination Committee, R.C.V.S., as now constituted, is the most highly skilled tribunal obtainable in point either of academic erudition or professional experience to guide the destinies of veterinary education.

(iv) We have already given reasons why for the specific purpose of dealing with the supervision of veterinary education the nomination of members representing Universities need not be on the same footing as that of other members. Furthermore, a short reflection upon the experience gained in the election of members to the Council over several years suggests that candidates who stood as such (*i.e.*, as specifically denominated University candidates), would secure little chance of election.

(v) In regard to the contention that the Council, R.C.V.S. has always sought skilled advice in matters of veterinary education, we note that this was somewhat hotly contested by some members of the Council itself at its last meeting (*Vet. Record.* May 20th. p. 650). We do not wish to support this dissent that took place within the Council itself, but rather agree that the Examination Committee has done its very best to seek advice. It is another matter whether it has always been eminently fitted by its constitution to assess that advice.

(vi) In making its recommendations for the amendment of the Charter of the R.C.V.S., in directions which are only partially covered by the two opposing resolutions passed by the R.C.V.S., and in directions which, moreover, greatly increase the scope of authority of the R.C.V.S., in the supervision of veterinary education, the Loveday Committee does not define precisely the suggested reconstitution of the R.C.V.S., but recommends (paragraph 29 (vi)): "that the R.C.V.S., the Universities, and the Veterinary Schools should consult together at an early date with a view to the elaboration of a scheme for carrying into effect such of these recommendations as require agreement and joint action." The R.C.V.S. therefore precipitately passed these resolutions (but did not transmit them to Government in their later reply) before they had taken the recommended action.

The second resolution passed by the Council, R.C.V.S., was as follows:—

> (2) "THAT THE COUNCIL EXPRESSES ITS DISAPPROVAL OF THE RECOMMENDATION MADE IN PARAGRAPH 29 (iii), NAMELY, THAT THE SAID UNIVERSITIES SHOULD CONSIDER THE INSTITUTION OF A DEGREE IN SCIENCE WHICH VETERINARY STUDENTS CAN OBTAIN IN THE FIRST THREE YEARS OF THEIR COURSE AFTER STUDYING THE SUBJECTS REQUIRED FOR THE CORRESPONDING M.R.C.V.S. EXAMINATIONS."

This resolution does not appear to have commanded the unanimous approval of Council, R.C.V.S., as in the case of the first resolution. In the annual report of the R.C.V.S. it is prefixed by the following explanatory passage:—

The next recommendation of the (Loveday) Committee is that the Universities named should consider the institution of a degree in Science which veterinary students can obtain in the first three years of their course after studying the subjects for the corresponding M.R.C.V.S. examinations, and that the Royal College of

Veterinary Surgeons should exempt candidates successful in the University examinations from its corresponding examinations.

Afterwards, in the third paragraph of their statement of reasons for passing the above resolution, the R.C.V.S. state:—

"*The first part of the above proposal is, of course, a matter entirely for the Universities concerned. As regards the second part, it is not impossible that a scheme. . . .*"

In this connection the N.V.M.A. wishes to make the following further observations:—

On the subsequent admission of the R.C.V.S. itself, therefore, the passing of this second resolution, expressing disapproval of a project which is described precisely in the words limited to the above-mentioned first part was, we submit, clearly *ultra vires.*

Further discussion of the reasons given by the R.C.V.S. in support of this resolution is therefore unnecessary.

The statement of reasons, however, contains a sentence which cannot be passed without some comment: "The paramount motive behind the Council's attitude to this is to secure that the course of instruction is such as introduces the student *from the very beginning to the art as well as the science of veterinary medicine and surgery.*" (Our italics.)

On page 4 of the same annual report the R.C.V.S. publishes a Draft Revised Examination Syllabus for the Diploma. The modifications introduced by the R.C.V.S. into their syllabus now make their curriculum resemble very closely that suggested by the Loveday Committee which "would facilitate the giving of Degrees by the Universities on the scientific studies of the first three years" (paragraph 46, Loveday Report).

The only essential item of difference, and in the Revised Draft R.C.V.S. syllabus the only item during the first three years of study which has reference to the art rather than to the science of the veterinary calling, is an examination in "Animal Management," which "may be taken at any time on the recommendation of the School, provided that no student will be eligible to sit for the Examination in Hygiene (that is, the examination held at the end of the fourth year of the curriculum) until he has passed in this subject." (Annual report, R.C.V.S., page 4.)

In comparison, it will be contended by the majority of the members of the Association which we have the honour to represent here to-day, that far more effectual provision is made for introducing the student to the art of his calling from the very beginning of his studies by the following recommendation of the Loveday Report (paragraph 40), namely:—

"*We therefore recommend*:—

(i) *that a pupilage of not less than six months upon a farm be made compulsory for all students and evidence that this has been served be produced by each student before he is admitted to the fourth year of study. Exemption might be given in certain circumstances,* e.g., *to the son of a farmer.*

(ii) *that a Field Station for the teaching of Animal Husbandry be acquired by each School. . . .*"

Again, one of the recommendations made by the Loveday Committee is that the R.C.V.S. Council, reconstituted by amended Charter in the manner suggested by them, "*should be entitled to*:—

(c) *require from candidates for membership such periods of residence on farms and under the supervision of veterinary practitioners as shall seem requisite to the Council. . . .*" (Paragraph 29 (ii), c.)

The suggested plan of the Loveday Committee, in the mind of a large body of experienced veterinary practitioners, is more conducive to the sorely needed early training of the student in practical matters than an inquisition in a set examination subject entitled "Animal Management," for practical instruction in which the resources of the Schools, in point of location, access to farm animals and equipment, are at present, it is felt, lamentably inadequate.

Already, it is widely felt that, in spite of strong opposition within the Council, R.C.V.S. itself, the Council has conceded the principle, in some measure at least, of the award of Degrees by Universities for the first three years of the curriculum, by its approval of the Cambridge scheme (as given in the report of the last meeting of the Council—*Veterinary Record.* May 20th, 1939. p. 646).

The basic sciences of the veterinary calling, as they are to be arranged henceforward in the first three years of the curriculum, are well worthy, it is felt by the N.V.M.A., of the Pass Degree of a University, and specialised proficiency in certain of the subjects ought to entitle the student to an Honours Degree, as is proposed and now accepted by the R.C.V.S., in the case of the Cambridge scheme. The irksomeness of obtaining the degrees hitherto awarded by Universities in veterinary science (and to the award of which the R.C.V.S. has raised no objection) will thus cease, and a large bulk of veterinary students ought to find relatively easy the achievement of University status. The Loveday Report makes plain that the proposed degree is *a degree in Science,* and does not mean it to have any professional standing, as implying a qualification to practise.

. . . . . .

Resolutions on the Loveday Report

Passed by Veterinary Officers' and Public Health Committee, N.V.M.A., January 3rd, 1939:—

That this Committee welcomes the recommendations of the Loveday Report in general,

with special reference to those designed to improve the training of the future public health officer. The Committee is of the opinion that the conferring of University training on members of the profession will operate in favour of greater efficiency and more harmonious working with officers of other branches of public health services.

Passed by the Scottish Branch of the Association:—

While there may be some points on which this Branch differs from the findings of the Committee on Veterinary Education, this Branch nevertheless is of the opinion that the report offers considerable possibilities for the future of veterinary education and therefore wishes to record its general approval of the Report and to register that it is in full accord with the resolution passed by the Council of the National Veterinary Medical Association at its meeting on January 3rd, 1939.

Passed by the Midland Counties Division:—

That this meeting of the Midland Counties Veterinary Medical Association, held on December 16th, 1938, wishes to place on record its general approval of the salient recommendations of the Loveday Report. These recommendations are considered to be in the best interests of all sections of the profession and should do much to ensure and secure its continuous advancement.

Passed by the Council of the Society of Veterinary Practitioners:—

That the Council of this Society wishes to place on record its general approval of the recommendations embodied in the Loveday Report and is of the opinion that these recommendations, with special regard to those relating to facilities for the teaching of practical animal husbandry and preventive and curative medicine, will operate in favour of better trained graduates entering the profession, thus providing a fully trained personnel more in accord with modern requirements both for the State Service and private practice.

Passed by the Veterinary Research Club:—

This Club, at a meeting of its members held on December 9th, 1938, expressed commendation of the ideals of the Loveday Report on Veterinary Education. The meeting further wished to place on published record its view that the recommendations made in the Report embody the outlines of much needed improvement in the system of veterinary education. The anticipated improvement, in the view of the Club, will have as an urgently desired result the provision of better trained recruits to the veterinary profession, including an improved personnel for veterinary research and teaching posts. This hoped-for achievement must needs contribute fundamentally to the general advancement of the whole veterinary profession by increasing its usefulness in the service of the public.

. . . . .

We shall now be happy to answer any questions you, Sir, and the Members of your Council care to put to this deputation.

The President: Major DeVine, would any of your members like to amplify this statement?

Major DeVine: I do not think so, at this stage, Sir.

The President: We shall be pleased to hear any of them if they have any views which they wish to put forward.

Major DeVine: The Committee have all gone very carefully into this. They are unanimous on this report, and they all agree with it; so if there are any points which you would like further elucidation upon so far as we are concerned, we should be pleased to help by giving individual answers.

The President: I can say at once that this is a very comprehensive report, and deals with the subject very thoroughly, and deserves careful consideration. We shall take the views of the "National" carefully into consideration, and if any point arises in our discussions on which we would like further information from you with regard to your views we would communicate with you at once, and perhaps ask you to see us once more, if we found that necessary. In the meantime it would be impossible to discuss this at this meeting until our members have had time to give it careful consideration. I think that is really all we can do to-day.

Major DeVine: We were rather hoping, as you have been dealing with the Report for a period of time now, that you would be able to make some statement, or to ask some questions.

The President: We have still further reports to come in, and we are waiting for further information: and this report of yours, together with those which we have still to consider, will be dealt with fully before we draw up our final report. You may rest assured on that. The points that you raise, I think I can say beforehand, will receive very favourable consideration; but I do not think we can do more than that to-day.

There is, however, one matter here to which my attention has been drawn, and I should like to ask you this. Would you kindly refer to page 7 of your report, at the foot of the page, paragraph 8. We might at this stage have from you, if you will be so good, an elucidation of this sentence: "The N.V.M.A. is now the only organised body within the veterinary profession which has no vested interest in veterinary education, and it therefore claims to speak from disinterested motives." Would you elaborate that?

Dr. Edwards: On behalf of the deputation I have been asked to reply to that question. At the present time the N.V.M.A. is the only body placed in a position in which the R.C.V.S. Council and the schools are not placed—that is, placed in a position in which they can speak with entirely disinterested views in the cause

of veterinary education. You and your Council have, by the meaning of the words, a vested interest in veterinary education. You have certain statutory powers conferred upon you to work an external examination system. The schools, through their Governors, have likewise a vested interest in the teaching. We, the members of the National Veterinary Medical Association, on the other hand, have no statutory authority whatsoever conferred upon us. We feel that we speak, as we think, with the minds of the profession at large, with no direct authority, no direct interest in veterinary education, and that was the meaning that was intended when the word "vested' was employed —the dictionary meaning of the word, "A personal interest."

The PRESIDENT: Thank you. Would you like to discuss procedure amongst yourselves before we close?

Major DEVINE: No, Sir. I should like to say again how grateful we are to you for meeting this deputation to-day and for so carefully listening to this report. I have seen that the members have given the closest attention to it. I was rather hoping that you would ask for further information on the points which we have raised, but I understand now that you wish to consider it amongst yourselves in Council and reach your decision on the points.

The PRESIDENT: I can say, I am sure, from the whole Council, that we thank you for this extraordinarily clear document. Your points are clearly expressed, and there can be no doubt that the Council will give it very serious consideration; and we express our thanks to Dr. Edwards for his reading it at such length and so clearly, and to you for coming here this afternoon.

Major DEVINE: Thank you very much, Sir.

Mr. STEELE-BODGER: I should like, if I may, to add my thanks to this expression by our President for the way in which we have been received, and if I may say so, Sir, what has given me personally, and I am sure all of us, great satisfaction is your expression not only that you will give this report your serious consideration, but your very favourable consideration. We all do trust, Sir, that when you have had time to peruse this we may find that we have little in dispute between us.

The PRESIDENT: If I may detain you just for a moment before you go, one member has asked a question on page 6, paragraph 1: "Veterinary education stands in need of drastic re-orientation and re-adaptation to meet modern needs." I am asked if you would say what you mean by "re-orientation"?

Dr. EDWARDS: Yes. I think that has been dealt with at very great length in our official Journal, Sir, and it is that the machinery that was available for teaching veterinary education up to, say, a quarter of a century ago is not adapted now to teaching veterinary matters as they have developed—and are developing at great speed and developing at great width, one might say—during the last few years. There is no provision made, as we have stated here later, at the teaching centres for teaching in connection with agricultural animals in the way in which it ought to be taught, and in a way in which it was not necessary a quarter of a century ago, when the horse was our important animal. Now the horse has been relegated to a position of relatively minor importance, and the farm animal to a position of greater importance; and we need to re-orient our system of veterinary education so as to meet that pressing modern need.

(*The Deputation then withdrew.*)

The PRESIDENT: Gentlemen, I presume you will wish to have this report circulated to every member of the Council beyond those who are here to-day, to come up for the Council's consideration at the adjourned meeting on the Loveday Report.

Colonel WALKER: Might I suggest that when it is circulated members of the Council should be invited to send in notes on it and express their opinions in writing?

The SECRETARY: Yes, Sir. I suggest that we take a note of those who are here, and send copies to the absent members.

The PRESIDENT: I presume, gentlemen, you do not wish to go any further with it this afternoon? That will conclude the business of the meeting, then.

The meeting then terminated.

FLUKE LOSSES IN CLARE

Reference to cattle losses in Co. Clare was made in the Dail recently when Mr. Thomas T. Burke asked the Minister for Agriculture if he was aware of the huge number of cattle which had died in the county during the past six months as a result of the disease known as fluke; that this disease had caused great economic distress throughout the country; and, if so, whether he would give financial assistance or some other compensation to owners of cattle which died.

Replying, Dr. Ryan, Eire Minister for Agriculture, said that he was aware that losses of cattle from liver fluke in Clare last season were somewhat greater than in an average season. The losses had been accentuated by the severe weather last autumn and winter. In response to requests recently received he was having further enquiries made with a view to ascertaining more precisely the extent of the losses involved. He must, he said, await the result of those enquiries before he was in a position to make any statement about compensation. In that connection his inspectors had given special warning to farmers about the need of taking precautionary measures against fluke. He regretted that these precautions had been neglected by many farmers.

N.V.M.A. DIVISIONAL REPORT

Yorkshire Veterinary Medical Society*

MEETING AT HULL

A general meeting of the Yorkshire Veterinary Medical Society was held on Wednesday, May 24th, 1939, when the members of the Division and visitors were the guests of the British Cod Liver Oil Producers (Hull) Ltd.

A mixed party of about 30 were shown over the Oil Refinery and the Biological Testing Station of the firm at Marfleet, Hull. Members and their guests were able to trace the development of the oil from its arrival at the refinery, which it reaches after being extracted from the livers on board the trawlers, right to the dispatch room where the standardised oil is bottled and labelled. The tour of inspection included the Biological Testing Station where the potency of the oil is tested by assessing the degree of calcification it produces in the wrist bones of white rats which have already been fed on a diet productive of rachitic conditions.

After the tour of inspection the party were entertained to tea. After tea there followed a most instructive talk on the efficiency of cod liver oil in dietetics and the treatment of burns. The talk was illustrated by lantern slides and "talkie" films.

At the close of the film show and on the call of the President (Mr. W. R. McKinna) the party accorded a hearty vote of thanks to the firm for the trouble they had taken in showing all that would interest and for the very warm welcome given to the Division.

Before concluding the meeting the following business was dealt with, the President taking the chair.

The minutes of the last meeting, having been published in the *Veterinary Record*, were taken as read and were adopted.

Obituary.—The President referred to the death of Mr. A. McCarmick of Leeds, who, he said, had been one of the oldest members and an honorary associate of the Society. As a mark of respect to his memory those present stood for a few minutes in silence.

The Secretary was instructed to write a note of condolence on behalf of the Society.

Correspondence.—(1) From the Secretary of the Royal Sanitary Institute, asking for the name and address of the President of the Yorkshire Veterinary Medical Society so that the latter might be elected as one of the Vice-Presidents of the Veterinary Hygiene section of the Health Congress at Scarborough in July. This letter had already been answered and the honour accepted by Mr. McKinna, so no further action was taken.

(2) From the General Secretary of the N.V.M.A., in which he asked for a list of the names of the members of the "Yorkshire," on behalf of the Finance and General Purposes Committee of the N.V.M.A., in order that the Committee might have the necessary information available to consider the question of a composite subscription to cover both membership of the N.V.M.A., and the local Division. It was agreed to send the list of names.

(3) From the General Secretary of the N.V.M.A. asking members to bring to the notice of the General Purposes Committee any case of a client having used unspecified "remedies" guaranteed to cure contagious abortion and sterility in cattle, but which had no effect on these conditions, and when a claim for compensation was made against the producers they failed to make good their guarantee. In the course of a short discussion, in which several members took part, the view was expressed that it was wrong of the N.V.M.A. to contemplate giving help to any person to regain money spent on quack remedies, but it was finally decided that any member who knew of such a case should communicate with the N.V.M.A.

(4) A covering letter sent with an Air Raid Precautions Scheme for Animals, drawn up by the National Emergency Committee of the N.V.M.A. was next read. The letter asked that the Division get in touch with the local authorities in the area with a view to pressing for an A.R.P. scheme for animals. This matter had already been dealt with at a recent meeting of the Council of the Division and the Secretary had already written to the various local authorities in the area giving an offer of help. In answer to the Secretary's letter some local authorities had asked for a copy of the scheme to be sent, but it was felt that, at present, the Society was not in a position to do so, and it was decided to wait until instructions were received by the local authorities from the Home Office before going further into the matter. The Secretary was instructed to write and inform the N.V.M.A. what action had been taken.

Election of Members.—Miss C. A. Woods, Menston, and Mr. T. F. Stokes, Wakefield, were elected to membership of the Society.

Messrs. F. Bradley, Hessel, M. Dugdill, Hull, C. Harvey, Wakefield, and Major Bond, Malton, were nominated for membership.

Resignation.—It was agreed to accept with regret the resignation of Mr. J. Cochrane-Dyet, late of Malton.

Before the meeting closed the Secretary was instructed to write thanking the British Cod Liver Oil Producers (Hull) Ltd., for the very great hospitality they had shown the Society.

A. J. Adams, *Hon. Secretary.*

*Received for publication May 26th, 1939.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

June 19th.—Meeting of the Editorial and other Committees of the N.V.M.A. at the Royal (Dick) Veterinary College, Edinburgh. Editorial, 4 p.m.

June 20th.—N.V.M.A. Committee and **Council** Meetings, Royal (Dick) Veterinary College, Edinburgh.

June 20th.—Meeting of the Society of Veterinary Practitioners, North British Station Hotel, Edinburgh, 1.15 p.m.—preceded by luncheon, 12.45 p.m.

June 20th.—R.C.V.S. Committee Meetings.

June 21st.—R.C.V.S. Committee Meetings.

June 21st.—R.C.V.S. Annual Dinner.

June 22nd.—R.C.V.S. Committee Meetings.

June 23rd.—R.C.V.S. Committee and **Council Meetings.**

June 29th.—Summer meeting of the South-Eastern Division, N.V.M.A., at the South-Eastern Agricultural College, Wye, Kent, 2.30 p.m.

June 30th and July 1st.—R.C.V.S. Written Examinations.

July 23rd—28th.—N.V.M.A. Congress at Great Yarmouth and Gorleston-on-Sea.

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VETERINARY COUNCIL (EIRE)

At a meeting of the Veterinary Council held on June 7th, 1939, Professor O'Connor as Returning Officer reported that at the Council Elections held on May 26th, he had declared Mr. P. F. Dolan elected as General Elected Member for four years and Professor A. F. O'Dea as Limited Elected Member also for a period of four years. Mr. A. A. Donnelly was elected President.

The following comittees were appointed: Standing and Penal Cases Committee: Professor W. Kearney, Mr. P. F. Dolan and the President; Finance Committee: Professor W. Kearney and Mr. P. F. Dolan.

Professor W. Kearney was appointed Honorary Treasurer.

PERSONAL

Dr. Minett's Appointment in India

We learn that Dr. F. C. Minett, M.B.E., D.Sc. (Lond.), Professor of Pathology, Royal Veterinary College, has accepted the appointment as Director of the Imperial Institute of Veterinary Research, Muktesar, and the Associated Institute of Animal Nutrition at Bareilly, United Provinces. More detailed reference to this important appointment will be made in an early issue of the *Record*.

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We are glad to learn that Mr. P. J. Howard, M.R.C.V.S., is now back at Cushnahouna, Ennis, Co. Clare, and making good progress towards complete recovery from his recent accident.

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Marriage.—Loveless—Allen, on April 11th, at Christ Church, Tunstall, Stephen F. Loveless, M.R.C.V.S., son of the late Mr. and Mrs. Loveless, of Bressingham, Diss, Norfolk, to Marjorie, elder daughter of John T. Allen, M.R.C.V.S., and the late Mrs. Allen, of Meadow Cottage, Tunstall, Stoke-on-Trent.

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Colonial Veterinary Service

Appointment.—The appointment is announced of Mr. L. H. Lester, M.R.C.V.S., as Veterinary Officer, Uganda.

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Promotions.—Announcement is made by the Colonial Office of the following promotions in the Veterinary Service: Captain R. L. Creery, M.R.C.V.S. (Veterinary Officer), Senior Veterinary Officer, Kenya; Mr. W. G. Emerson, M.R.C.V.S. (Veterinary Officer), Senior Veterinary Officer, Kenya; Mr. W. Fotheringham, M.R.C.V.S. (Veterinary Officer), Senior Veterinary Research Officer, Kenya.

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On Leave.—The following officers of the Colonial Veterinary Service arrived home on leave during May: Messrs. W. A. Burns (Tanganyika Territory) and D. E. Faulkner (Gold Coast).

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Errata.—Mr. R. E. S. Tuckey, M.R.C.V.S., of Whitchurch, writes to point out that, in his letter on the subject of contagious bovine mastitis published in our issue of June 3rd (page 717) the dose of formaldehyde should have read ʒ ss (twice daily) and not ʒ ii as stated.

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"Animals in Air Raid Schemes": In Mr. Wm. Scott's letter published in our last issue (page 746; column 2), in line 3 *for* "Society" *read* "County."

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R.C.V.S. OBITUARY

Troughear, John, 36, Oak Avenue, Ickenham, Mddx. Graduated Edinburgh, July 19th, 1887. Died June 7th, 1939; aged 73 years.

THE LATE L. W. HEELIS, M.R.C.V.S.

An Appreciation

By the passing of the well-known personality of Leonard Heelis, Warwickshire and the Midlands have lost an outstanding character. One of the most popular veterinary surgeons in the district, "Leonard," as he was known to a wide circle of friends, was made in a mould that might have been created by Surtees, and emerged from the pages of "Jorrocks." In his earlier days a keen horseman and to his death an excellent judge of a horse, his abiding passion was for the equine side of veterinary practice and the writer can vouch for the fact that on his first day of pupilage with a well-known veterinary surgeon in the Midlands, Heelis arrived driving a tandem which he skilfully tooled into the yard with admirable aplomb and coolness!

He served throughout the War in the R.A.V.C., liked by all who met him, and in the interesting autobiography recently published under the title of "A Trooper in the Tins," mention is made of Heelis as a very popular Veterinary Officer. His later years were marred by the illness which had overtaken him, but in spite of this, he maintained a remarkable fortitude and courage to the end. His many friends will feel his loss severely and both they and the veterinary profession are the poorer for his passing.

H. W. D.

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R.A.V.C. ANNUAL DINNER, 1939

The following is a list of officers who attended the above dinner on Friday, June 9th, 1939, at Grosvenor House, Park Lane, W.1, when Brigadier C. A. Murray, Director, Army Veterinary Services, presided, and General Sir Reginald S. May, K.C.B., K.B.E., C.M.G., D.S.O., was the guest of the evening.

Major-Generals: Sir Layton J. Blenkinsop, K.C.B., D.S.O., and J. J. B. Tapley, C.B., D.S.O.

Brigadiers: H. S. Mosley, D.S.O., and A. J. Williams, D.S.O., F.R.C.V.S.

Colonels: H. J. Holness, D.S.O., A. Smith, F.R.C.V.S., A. G. Todd, C.B.E., D.S.O., G. K. Walker, C.I.E., O.B.E., F.R.C.V.S., and W. H. Walker, D.S.O., O.B.E.

Lieut.-Colonels: E. B. Bartlett, O.B.E., B. R. Body, A. E. Clarke, G. Conder, D.S.O., W. J. Dale, O.B.E., O. S. Fisher, O.B.E., J. R. Hodgkins, D.S.O., F.R.C.V.S., G. P. Knott, O.B.E., R. W. Mellard, D.S.O., T. Sealy-Green, S. L. Slocock, M.C., F.R.C.V.S., F. C. Stratton, E. G. Turner, D.S.O., L. M. Verney, D.S.O., F.R.C.V.S.

Majors: F. J. Andrews, B.Sc., T. F. Arnold, W. F. Aston, R. M. Bamford, O.B.E., J. Bell, E. C. Bowes, J. J. Clune, J. J. Dunlop, M.C., J. Harrison, T. Hicks, W. B. Howe, C. H. Hylton Jolliffe, F.R.C.V.S., J. S. Keane, A. J. Kelly, R. H. Knowles, C. J. R. Lawrence, O.B.E., A. S. Lawrie, T. Lishmann, G. Lloyd, D.S.O., F.R.C.V.S., H. Mason, O.B.E., M. A. Murphy, G. E. Oxspring, O.B.E., F.R.C.V.S., E. S. W. Peatt, O.B.E., F.R.C.V.S., J. J. Plunkett, O.B.E., H. Stephenson, M.C., W. H. Thomas, G. F. Steevenson, O.B.E., J. R. Steevenson, D.S.O., C. H. S. Townsend, O.B.E., M.C., F.R.C.V.S., T. E. Campey, M.B.E.

Captains: R. S. T. Bowden, K. I. Barlow, E. Brayley-Reynolds, O.B.E., J. Clabby, J. T. Edwards, C. P. Fisher, J. Going, A. A. Kidd, J. A. Langley, W. P. Moss, J. McL. Ross, D. I. C. Tennant, A. J. Warburton, and G. F. Ives, M.C.

Lieutenants: D. M. Stewart and W. E. Turton.

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ARMY VETERINARY SERVICE

Movements of Officers

Major T. F. Arnold, Major J. S. Keane, and Captain K. I. Barlow, also Major W. M. Rouse, are at present in this country on leave from abroad.

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ROYAL EMPIRE SOCIETY'S GOLD MEDAL

The Royal Empire Society's gold medal has been awarded this year for "An African Survey," by Lord Hailey, a work—of outstanding importance from the point of view, among others, of agricultural economics—shortly to be reviewed in our columns. The medal is awarded for a book or books written in recent years on economics, history, politics, or science, or for meritorious services to the Empire, which, in the opinion of the award committee, have contributed to the objects of the Society as defined in its Royal Charters of Incorporation.

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J. B. DUNLOP'S WORK: AN "HISTORIC PARADOX"

Major Robert McCreary, M.C., B.Sc., in the course of an address to the Belfast Rotary Club on "Belfast Transport Systems—A Retrospect," reported in the *Northern Whig and Belfast Post*, said that Mr. J. B. Dunlop, M.R.C.V.S., the Belfast inventor of the pneumatic tyre, which practically put the horse out of the transport business, was responsible for one of the paradoxes that make retrospective history interesting. In 1891 he was commended by the management of the Belfast Street Tramways Company for his skill as veterinary surgeon to the Company in successfully combating a serious outbreak of "pink-eye" among the horses, 561 out of 788 being affected, and only eight died.

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At the bi-annual meeting of the Federation of Wholesale Fresh Meat Traders, held at Nottingham, attention was called to the prevalence of warbled hides. Mr. John Fisher, Hull, stated that in his own town the proportion of warbled hides in March, 1938, was 37 per cent., and in March of this year the figure was 41 per cent. It was decided to communicate this information to the Hide Improvement Society.

RESEARCH DEFENCE SOCIETY

"The Experimental Method in the Conquest of Disease" was the subject for the thirteenth Stephen Paget Memorial Lecture delivered by Sir Edward Mellanby, Secretary to the Medical Research Council, on the occasion of the annual general meeting of the Research Defence Society, which was held in the London School of Tropical Medicine on Tuesday last, Lord Lamington presiding.

Sir Edward Mellanby said (states *The Times* report) that the days when research workers were on the defensive were passing; the public could see at every turn the enormous benefits to mankind that had come from the investigator in medical science. He had seen models of some of his own rachitic dogs exposed to view in a shop in Whitehall. It was just because it was possible to see those models of deformed dogs that it was difficult to see the same kind of deformities in children throughout the country.

In the memory of many of them, stunted children with bandy legs were so common as either to pass unnoticed or be a source of amusement. If they saw them now they would be angry, because they would realise that they were the products of ignorance or negligence. Many women were still paying the toll of rickets either by their own deaths in childbirth or by those of their babies. As the present generation of girls became mothers it was certain that this disability would greatly diminish.

The nature of diphtheria antitoxin became known through animal experiments, and there was every reason to believe that the proper use of present knowledge would result in the disappearance of diphtheria from this country as in many parts of Canada and the United States.

They were criticised for failure to find a cure for cancer, the hardest problem in both medicine and biology yet encountered. They were certain, however, that the experimental method was the main one which could lead to the requisite knowledge and they were hopeful that problem also would submit ultimately to that type of investigation, as in the case of so many other diseases.

As a result of discoveries by animal experiment only four or five cases of puerperal sepsis in 100 were fatal instead of 22 or more. Whereas 17 out of every 100 people under 50 with pneumonia died previously, that number had been reduced in Birmingham and probably elsewhere to under two per 100. Cerebrospinal meningitis, from which previously 80 per cent. of those attacked died, now had a mortality rate of 5 to 10 per cent. Was there any man of sense who thought that the sacrifice of possibly thousands of mice was too high a price for that?

The experimental method of investigation was the royal method of discovery, and its practice the greatest intellectual contribution in the history of mankind for the promotion of bodily and material welfare. It had transformed the life of civilised man in 100 years and it had led to the prevention and cure of disease affecting millions of animals and men, prolonging life and reducing the tragedies and griefs of mankind. It ought not to be the task of the experimenter to defend himself against a minute section of the public.

FOOT-AND-MOUTH DISEASE IN YORKSHIRE

Two further outbreaks of foot-and-mouth disease, making four in all, were confirmed in the West Riding on June 8th. The new outbreaks were at Wibsey, Bradford, and at Cottingley, near Bingley. The first outbreak of the present series occurred at Morton, Keighley, and on the preceding Wednesday stock at Ashfield Farm, Otley, were also found to be affected.

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In the course of a paper on the foot-and-mouth disease position in Germany, presented to the recent International Agricultural Congress at Dresden, Dr. Müssemeir, Minister in charge of the German Board of Health, showed that in spite of every precaution by way of immunisation, etc., the present epidemic had spread throughout the entire Reich, and up to the end of last year had affected over 700,000 farms. Some 500,000 cattle were vaccinated last year with a product containing the virus in an attenuated form and which, it was claimed, gave a reasonable degree of immunity for about three months.

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BLOEMFONTEIN TURF CLUB RESIGNATIONS

We have received, from Colonel Wakefield Rainey, the following excerpt from the Bloemfontein *Friend*: "Four stewards of the Bloemfontein Turf Club have resigned. It is understood that they took this step because of the alleged failure of the local executive of the Jockey Club of South Africa to support them in disciplinary action in connection with racing.

"Messrs. A. C. White (Chairman), W. Leinberger (Vice-Chairman), H. R. B. Barlow and Major D. B. Strachan have resigned, while Colonel Wakefield Rainey, the Secretary, has given three months notice of his intention to relinquish his post.

"These resignations now leave seven vacancies to be filled among local stewards.

"Mr. White is the senior steward in Bloemfontein, having been Chairman or Vice-Chairman of the Club for the last twelve years. For the past 20 years he has been a steward."

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CHEMOTHERAPY IN UNDULANT FEVER

"It is always valuable to hear of extensive experience in a disease which one sees comparatively rarely, and a report on undulant fever from Malta commands attention for this reason," says the *British Medical Journal* (p. 342, February 18th). "The main lesson to be learnt from Professor J. E. Debono's observations (p. 326) is the extreme difficulty of assessing therapeutic effect in undulant fever; as he points out, it is a self-limited disease, like pneumonia or typhoid, although of usually longer and much more variable duration, and to distinguish spontaneous cure from cure by a drug would only be possible in the individual case if the effect of the drug were dramatic and immediate. The inconclusive nature of their observations has been admitted by some of the numerous authors who have reported the apparent effect of chemotherapy in small numbers of cases. Nearly all these reports have been favourable to

the treatment, and at first sight Professor Debono's observations appear to be in direct conflict with them. Lest his opinion should encourage the abandonment of a form of treatment which may after all be of some value, it should be pointed out that his cases differ in two ways from the majority of others. All were naturally infections by *Br. melitensis*, and it is possible that *Br. abortus*, the sole cause of undulant fever in this country and the commoner in many others, is the more susceptible of the two organisms to chemotherapeutic attack. Secondly, only seven of the patients were given sulphanilamide ('prontosil album' and 'streptocide' are two of many proprietary names for this substance); the remainder received prontosil rubrum, the first of all these preparations and now generally looked upon as having been superseded by later products. It is not clear if there was any difference in the effects of the two drugs, whether possibly beneficial or toxic. Since almost all other clinical reports deal either with sulphanilamide alone or in some earlier cases with prontosil soluble, this series is not comparable with them; it may, however, be compared with that reported in the *Journal* by C. Z. Neumann (August 13th, 1938, page 342), also from Malta, who used prontosil rubrum in 16 of his 20 cases, and was favourably impressed by the results. There is hence a conflict of opinion even in Malta, and one would like to see this resolved by a further trial in which only one drug was used, preferably sulphanilamide, with a standardised system of dosage given in alternate cases; only in this way can impressions, however fortified by repetition, be converted into facts. That sulphanilamide has a distinct if not startling effect on experimental infection by *Br. abortus* is shown by the work of G. S. Wilson and Irene Maier (*British Medical Journal*, January 7th, 1939, p. 8). Large doses were found necessary in the guinea-pig, but these were administered only once daily; four-hourly administration, maintaining the concentration of the drug in the blood continuously at an effective level, presumably favours the action of more moderate doses in the human patient. It may well be, as these authors suggest, that sulphanilamide treatment is only justified in severe or protracted cases, but on present evidence it certainly deserves further trial."

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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R.C.V.S. COUNCIL ELECTION, 1939

To the Fellows and Members of the Royal College of Veterinary Surgeons

Ladies and Gentlemen,—To all of you, and especially my friends overseas, in whom I have always taken a deep interest, who honoured me by recording your votes in my favour, I tender my very sincere thanks.

The analysis of the voting must amaze our Scotch friends because the Glasgow College has now lost the benefit of being represented by that able gentleman, Dr. Whitehouse, while another College has four members of its staff on the new Council—*hiatus valde defiendus.*

Yours faithfully,
T. D. Young.

39, Charterhouse Chambers,
Charterhouse Square,
Smithfield Markets,
London, E.C.1.
June 8th, 1939.

DISEASES OF ANIMALS ACTS, 1894 to 1937, and AGRICULTURE ACT of 1937 (PART IV)

SUMMARY OF RETURNS

Period.	Anthrax.		Foot-and-Mouth Disease.		Parasitic§ Mange.		Sheep Scab.	Swine Fever.	
	Outbreaks confirmed.	Animals attacked.	Outbreaks confirmed.	Animals slaughtered as diseased or exposed to infection.	Outbreaks reported by the Local Authorities.	Animals attacked.	Outbreaks confirmed.	Outbreaks confirmed.	Swine slaughtered.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Period 16th to 31st May, 1939	34	41	—	—	2	5	1	148	113
Corresponding period in									
1938	36	43	1	125	2	4	4	40	28
1937	59	73	—	—	5	6	2	51	37
1936	24	26	—	—	3	6	3	93	88
Total 1st January to 31st May, 1939	401	432	29	4,357	28	60	147	765	451
Corresponding period in									
1938	429	468	152	19,883	40	65	98	220	145
1937	358	409	3	262	77	114	116	500	309
1936	237	281	4	379	68	203	135	933	664

Note.—The figures for the current year are approximate only.

§ Excluding outbreaks in Army Horses.

N.V.M.A. Congress, Great Yarmouth, July 23rd-28th, 1939

PROVISIONAL PROGRAMME

The following is the Provisional Programme of the Association's Congress to be held at Great Yarmouth from July 23rd to July 28th, 1939:—

SUNDAY, JULY 23rd.

8.30 p.m.—"At Home" as guests of the Eastern Counties and Lincolnshire Divisions (Winter Gardens Ball Room).

MONDAY, JULY 24th.

10.30 a.m.—Civic Welcome.

11 a.m.—Opening of Exhibition of Drugs and Instruments.

11.30 a.m.—Paper: "Causes of Deaths among Calves in Dairy Herds."

By Dr. R. Lovell, M.Sc., M.R.C.V.S., D.V.S.M.

Openers: Mr. T. Wilson, M.R.C.V.S., Captain P. R. Turner, M.R.C.V.S., Mr. G. N. Gould, Junr., Captain D. Campbell, M.R.C.V.S.

Chairman: Mr. T. J. Bosworth, M.A., B.Sc., M.R.C.V.S., D.V.S.M.

Vice-Chairman: Mr. Hugh Begg, F.R.C.V.S.

Recording Secretary: Mr. J. S. Paterson, M.R.C.V.S., D.V.S.M.

3 p.m.—A number of films of scientific interest will be shown at the Town Hall.

9 p.m.—Civic Reception (Winter Gardens Ball Room).

TUESDAY, JULY 25th.

10 a.m.—Paper: "Infertility in the Mare associated with Irregularities in the Oestrus Cycle."

By Mr. F. Day, M.R.C.V.S.

Openers: Professor J. F. Craig, M.A., F.R.C.V.S., Mr. E. Brayley Reynolds, O.B.E., M.R.C.V.S.

Chairman: Sir Frederick Hobday, C.M.G., F.R.S.E., DR. MED. VET., F.R.C.V.S.

Vice-Chairman: Mr. H. H. Truman, M.R.C.V.S.

Recording Secretary: Mr. J. G. Murray, DIP. BACT., M.R.C.V.S.

11.30 a.m.—Paper: "Physiological Aspects of Bovine Sterility."

By Dr. John Hammond.

Openers: Professor J. A. Nicholson, PH.D., M.A., M.R.C.V.S., Professor W. C. Miller, M.R.C.V.S., F.R.S.E., Captain J. R. Barker, M.R.C.V.S., D.V.H., Major W. H. Wortley, M.R.C.V.S.

Chairman: Professor J. B. Buxton, M.A., F.R.C.V.S., D.V.H.

Vice-Chairman: Captain J. R. Barker, M.R.C.V.S., D.V.H.

Recording Secretary: Mr. J. G. Murray, M.R.C.V.S.

2.30 p.m.—Exhibits and Demonstrations (at Mr. W. Shipley's premises, Southtown, Yarmouth).

8.45 for 9 p.m.—President's Reception (Town Hall).

WEDNESDAY, JULY 26th.

10 a.m.—Paper: "Diseases of the Digestive System of Young Pigs."

By Dr. R. Manninger of Budapest.

Openers: Mr. J. O. Powley, M.R.C.V.S., Professor W. Kearney, M.R.C.V.S., Mr. G. S. Muir, B.V.Sc., M.R.C.V.S., Major F. L. Gooch, F.R.C.V.S.

Chairman: Dr. W. H. Andrews, M.R.C.V.S.

Vice-Chairman: Professor T. Dalling, M.A., M.R.C.V.S.

Recording Secretary: Mr. B. A. Claxton, M.R.C.V.S.

12 noon.—Paper: "The Centralised Veterinary Service."

By Mr. D. A. E. Cabot, M.R.C.V.S.

Congress Photograph.

3 p.m.—Annual General Meeting (Town Hall).

7 for 7.30.—Banquet (Town Hall).

THURSDAY, JULY 27th.

10 a.m.—Paper: "The Recent Advances in our Knowledge of Diseases associated with Mineral Balance in the Blood of Ruminants."

By Dr. H. H. Green.

Openers: Dr. H. Dryerre, Captain W. L. Little, F.R.C.V.S., Captain J. R. Barker, M.R.C.V.S., D.V.H., Professor J. A. Nicholson, PH.D., M.A., M.R.C.V.S.

Chairman: Major E. S. James, B.V.Sc., M.R.C.V.S., D.V.S.M.

Vice-Chairman: Mr. A. Spicer, F.R.C.V.S.

Recording Secretary: Mr. H. P. Standley, M.R.C.V.S.

Ladies' Golf Competition.

2 p.m.—Excursion: A motor tour of the Broads country and a motor launch trip on the principal waterways.

Gentlemen's Golf Competition.

9—2.—Veterinary Benevolent Dance (Town Hall).

FRIDAY, JULY 28th.

10 a.m.—Paper: "Joint-ill in Lambs."

By Mr. F. Blakemore, M.R.C.V.S., D.V.S.M.

Openers: Captain S. E. Hill, M.R.C.V.S., Captain W. Lyle Stewart, M.R.C.V.S., Mr. N. S. Barron, B.Sc., M.R.C.V.S.

Chairman: Mr. W. H. Dennett, M.R.C.V.S.

Vice-Chairman: Professor T. Dalling, M.A., M.R.C.V.S.

Recording Secretary: Mr. A. W. Gledhill, M.R.C.V.S.

11.30 a.m.—Paper: "Recent Advances in Therapeutic Agents."

By Professor G. F. Boddie, B.Sc., M.R.C.V.S.

Openers: Mrs. M. Sheppard, M.R.C.V.S., Dr. A. W. Stableforth, M.R.C.V.S., Dr. R. F. Montgomerie, B.Sc.

Chairman: Mr. J. H. Poles, M.R.C.V.S.

Vice-Chairman: Major T. J. Heatley, O.B.E., M.R.C.V.S.

Recording Secretary: Mr. T. A. R. Chipperfield, M.R.C.V.S.

Afternoon—Closing Meeting (Exhibition).
Council Meeting.

GREAT YARMOUTH CONGRESS, 1939: HOTEL LIST

The following Hotels have been approached and can offer accommodation to delegates to the Congress. **In view of the fact, however, that Great Yarmouth is a popular holiday centre, reservations should be made as soon as possible.** The accommodation indicated represents the number of members which the hotels will take and bears no relation to the total number of rooms.

Great Yarmouth.

Queen's Hotel, Marine Parade. (Licensed.) T.N. 2028. G.A. 25. Lift. N.P. H. & C.
Accommodation: 27 rooms. Tariff 17s. 6d. to 18s. per day inclusive.
This will be recognised as the headquarters hotel. Situated on the sea front, it is convenient to the town and station. A pleasant room will be reserved for Congress delegates.

Victoria, Marine Parade South. (Licensed.) T.N. 250511. H. & C. G.A. 50. Lift. N.P.
Accommodation: 12 double rooms, 6 single rooms. Tariff 16s. 6d. to 18s. per day.

Royal, Marine Parade. (Licensed.) T.N. 252611. H. & C. Pub. G. 100 yds. Lift. N.P.
Accommodation: 100 to 120 members. Tariff 18s. 6d. per day.

Star Hotel, Hall Quay. (Licensed.) Good commercial hotel near the Town Hall. T.N. 2643. h. & c. Pub. G. near. N.P.
Accommodation: 18 double rooms, 7 single rooms. Tariff from 12s. 6d. per day.

Two Bears, Southtown. (Trust Houses, Ltd.) (Licensed.) Small commercial hotel situated near L.N.E.R. Station. T.N. 319811. H. & C. G.A. 10.
Accommodation: very limited. Tariff 15s. 6d. per day.

Brunswick, King Street. T.N. 208011. H. & C. Pub. G. near.
Accommodation: limited. Tariff 12s. 6d. per day.

Limited accommodation is available at the following private hotels situated on the sea front and within easy reach of the town centre. Particulars of other hotels and boarding-houses can be found in the Official Guide which may be obtained from Mr. Louis Rump, Publicity Manager, Great Yarmouth.

The Imperial, Marine Parade. T.N. 2057. H. & C. Lift. Tariff 10s. 6d. to 12s. 6d. per day.

The Kimberley, Marine Parade. T.N. 2469. H. & C. Tariff 10s. 6d. to 15s. per day.

Brandon House, Marine Parade. T.N. 2903. H. & C. G.A. Tariff 9s. to 10s. 6d. per day.

The Flamborough, Marine Parade. T.N. 3022. Pub. G. 1 min. N.P. Tariff 12s. per day.

The Sandringham, Marine Parade. T.N. 2714. G.A. Tariff 2½ to 4½ gns. per week.

"Bonheur," Norfolk Square. T.N. 3288. H. & C. Tariff 2 to 3 gns. per week.

Gorleston-on-Sea.

Three miles south of Great Yarmouth. Good communications.

Cliff. (Licensed.) Situated on the cliffs in private grounds of over three acres, overlooking sea and harbour. T.N. 77. h. & c. G.A. N.P.
Accommodation: limited. Tariff 18s. per day.

Pier. (Licensed.) Situated on the sea front. T.N. 18 and 315. H. & C. G.A. close.
Accommodation: limited. Tariff 5 gns. per week.

White Lion. (Licensed.) Close to beach. T.N. 118. H. & C. Pub. G. 200 yds.
Accommodation: very limited. Tariff 5 gns. per week.

Caistor.

Small village three miles north of Great Yarmouth.

Manor House Hotel. (Licensed.) Residential hotel close to sea.
Accommodation: very limited. Tariff 15s. 6d. to 17s. 6d. per day. N.P.

List of Abbreviations

G.A.—Garage accommodation.
H. & C.—Hot and cold running water in all bedrooms.
h. & c.—Hot and cold running water in some bedrooms.
T.N.—Telephone number. N.P.—Night porter.